GENT

Installer's Manual

System 800
Fire Alarm Panel

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Scope

This second issue of the installer's manual, it covers the installation instructions of the 24-zone system 800 fire alarm panel with version 2 software enhancements. The manual gives information on how to install the panel, connect external circuits, power up and commission the system. It also includes fault finding information and technical data.

Safety

The following information is given in the interest of personal safety and to prevent damage to installed equipment and to ensure the system operates correctly.

The information symbol is accompanied with important text.

This can be either a warning to prevent personal injury or death, or a caution to prevent damage to the system equipment.

Associated documents

- Operator's manual 796689 (4188-658)

All the documentation associated with the panel should be kept together near the panel.

Issue Record

Issue	Date	Comment
1.0	7/12/00	This is the first issue of the installer's manual.
1.1	13/2/01	This is the first update to the installer's manual
2	9/3/03	This is the second update to the installer's manual include coincidence detection, sectori linking, improvements to the settings for delay mode and auxiliary relay configuration.

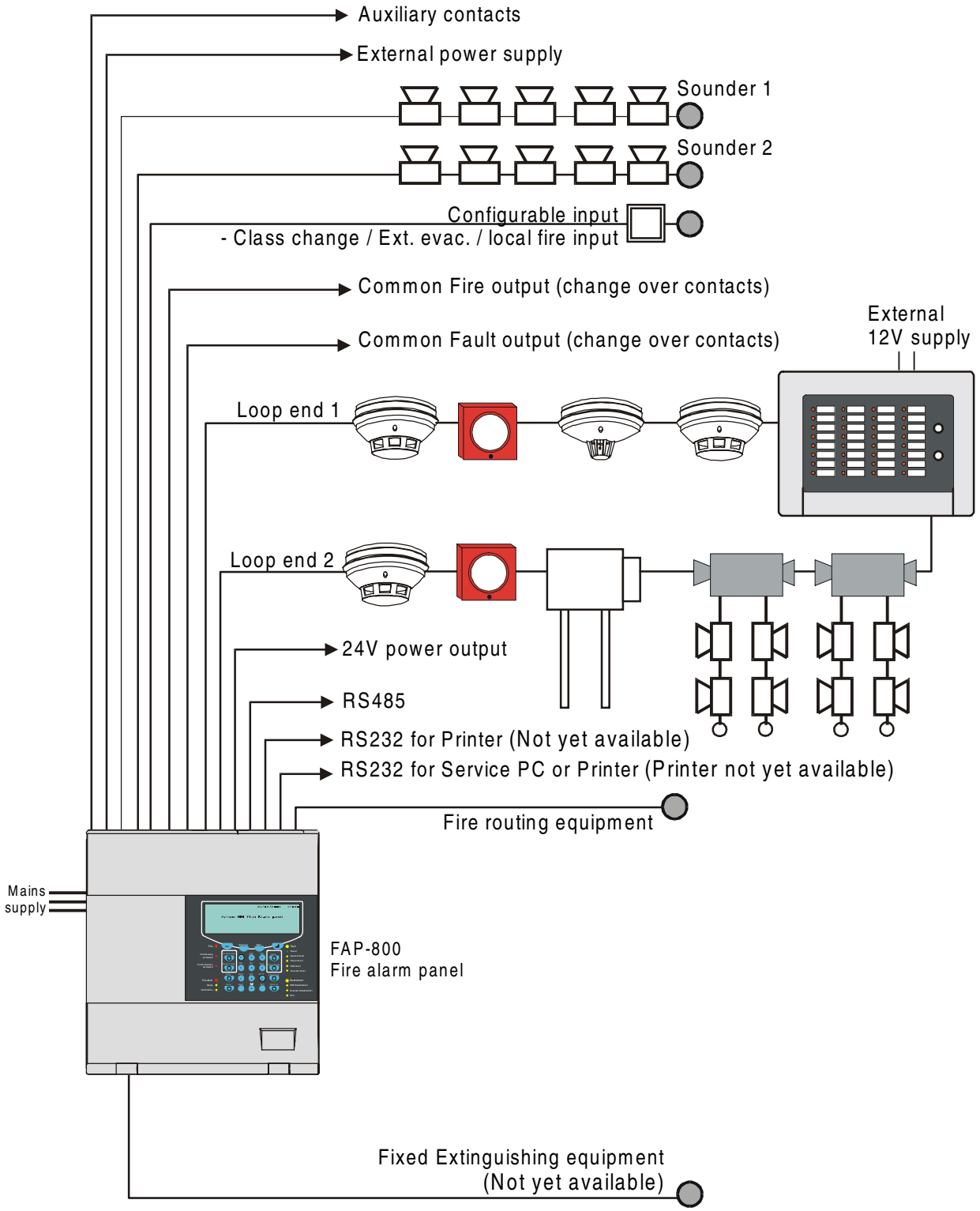
General system description

The system 800 fire alarm panel is designed to meet the requirements of EN54 Parts 2 and 4. It is suitable for installation in small to medium size buildings in accordance with the recommendations of BS5839:Part 1, to provide an automatic fire detection and alarm.

The system 800 panel is installed and configured to monitor devices such as detectors, manual call points, single input/output transponder and sounder control transponder units connected on a loop. Each device is capable of being addressed individually and may be assigned to one of 24 zones. The devices and zones in the system can each be given a label for identification, so that in an event condition the location is given on the display with the appropriate event message.

The panel has connections for external sounder circuits to raise an alarm in the protected buildings.

System 800 architecture



Notes to the installer

The installer should follow the general requirements of:

- BS5839:Part 1, the code of practice relating to the fire detection and alarm systems for buildings.
- The relevant parts of the BS7671 Requirements for Electrical Installation, Institute of Electrical Engineers Wiring Regulations 16th edition.

Second fix installation

To prevent the possibility of damage or dirt degrading the performance or appearance of the System products, the installation of second fix items, such as the *electronic module*, should be delayed until all major building work in the area is complete.

Notes

The installer should ensure:

- Cables recommended in the manual are used for wiring the system 800.
- Cable gland is used for the mains supply cable.
- Unused knockouts on an enclosure that have been removed are not left open.
- The wires between the cable termination point and terminals are as short and straight as possible.
- The cables of the system 800 and other systems are separated by at least 160mm, unless dedicated conduit / ducting is used.
- No part of the building structure is used for earthing.
- The cable length between the Repeat LED unit and the respective detector, where used, does not exceed 10m. This length must be included in the total cable length of the loop.
- The ends of the mains flexible conductors terminated in the product are crimped, using sleeved or insulated crimp terminals.
- Each mains powered control and indicating equipment is supplied via a dedicated 2-pole fused spur unit that is fed from a switch or protection device at the local mains supply distribution board.
- Mains power to the control and indicating equipment is not supplied from an **IT Power System**.

The installer should acquire:

- Site specific information from the interested parties which must include details on the location of products to be installed
- The acquired information together with this manual and the relevant standards should be used to assist the work.

Earthing

All earth connection points must be clean to provide good electrical conductivity.

- All earth leads and fittings provided must be installed
- The loop cable screen must be continued through each system device.

Fixtures and fittings

It is the installer's responsibility to provide:

- Adequate fixtures and fittings for the type of construction surface onto which a product is to be installed
- As an aid to this decision, the weight and overall size of each full assembly together with implications on cable entries and routing should be taken into consideration.

These procedures assume that the installer provides cable glands, steel BESA boxes and related items.

Cables

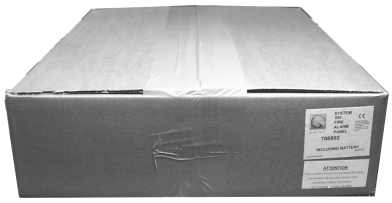
EMC approved cables suitable for wiring the system:

- **Mineral insulated cable (MICC) to BS6207:Part 1**
- **Delta Crompton FTZ2E1.5 FIRETUF OHLS fire resistant data cable**
- **Raydex CDT FG950**
- **Cavicel SpA FIRECEL SR 114** distributed by Cables Britain
- **AEI Cables FIRETEC**
- **BICC Pyrotenax FLAMESIL FRC**
- **Datwyler LIFELINE**

It is NOT permissible to run outgoing and return pairs in a multi core cable, due to inadequate separation and possible electrical interference problems.

Panel installation

Inspect the contents

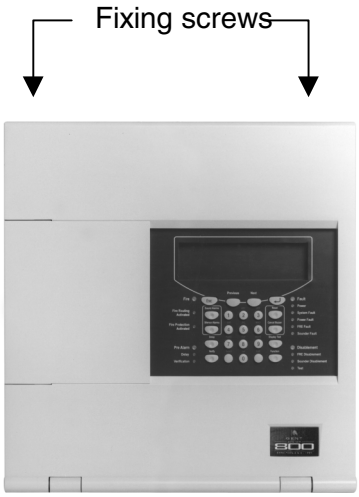


- Before starting installation work check the package label and the contents of the package.
- Check the contents, there should be:
  - System 800 fire alarm panel
  - 2 - Battery 12V 7Ah
  - Spares pack
  - Panel wall mounting template
  - Instructions

Content of the spares pack:

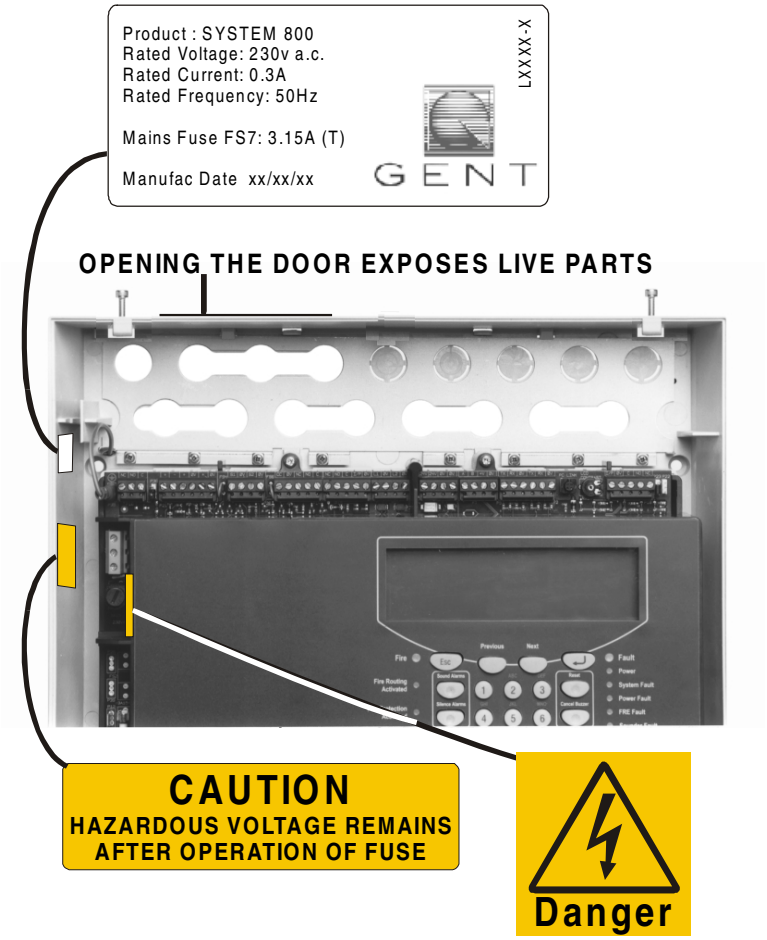
Parts	Quantity
Allen Key (door)	1
End-of-line resistor - 10K ohms	4
End-of-line label	2
Battery link	1
Spare 3.15A (T) fuse ceramic type for mains & battery supply	2

To open the panel door

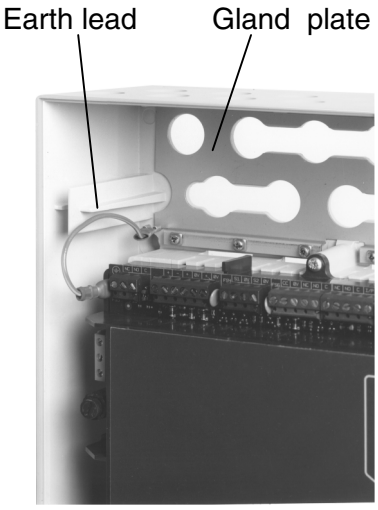


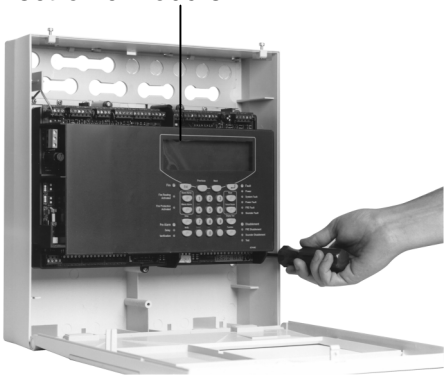
The panel *door* can be opened using the *allen key* supplied in the spares pack.

- Partially open the two *fixing screws* and then hinge open the panel door.
- Note the information on the panel and labels inside the enclosure.



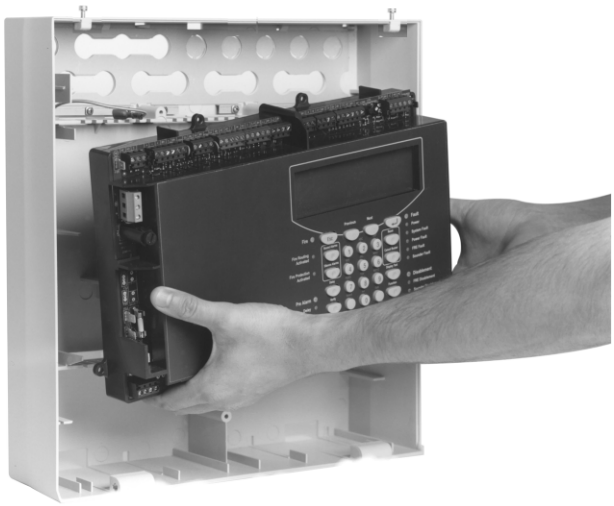
To remove and refit the electronic module



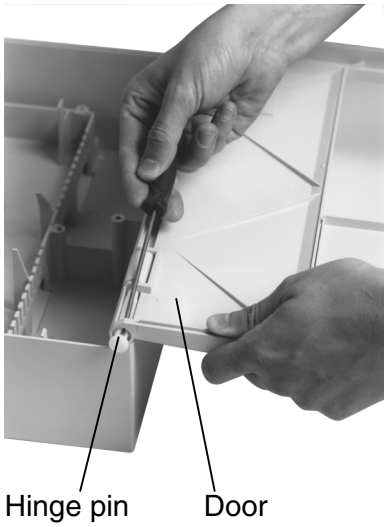


The *electronic module* should be removed from the *backbox* to prevent building dust getting into the module.

- Remove the *earth lead* connected to the *gland plate*.
- Remove the five fixing screws that are used to secure the *electronic module* to the *backbox*.
- Remove the *electronic module* from the *backbox*. Keep the *electronic module*, earth lead and screws in a safe place until required.
- To refit the electronic module: follow the procedure in reverse order.



To remove and refit the panel door

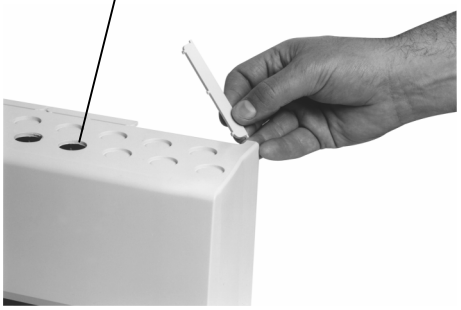


The *hinged door* on the panel may be removed from the *backbox* to ease installation work.

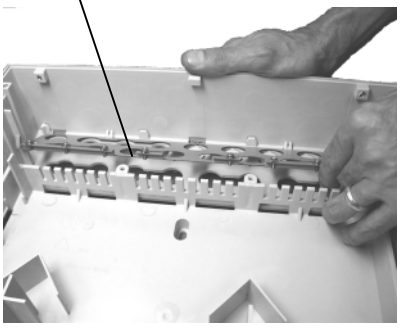
- To remove the door: Hold the door and use a terminal screwdriver to push out the two hinge pins, one at a time.
- To re-fit the door: Hold the *door* to the *back box* and with the *hinge pins* slot visible insert the pin into the assembly until it click fits into position.

To mount the backbox on wall

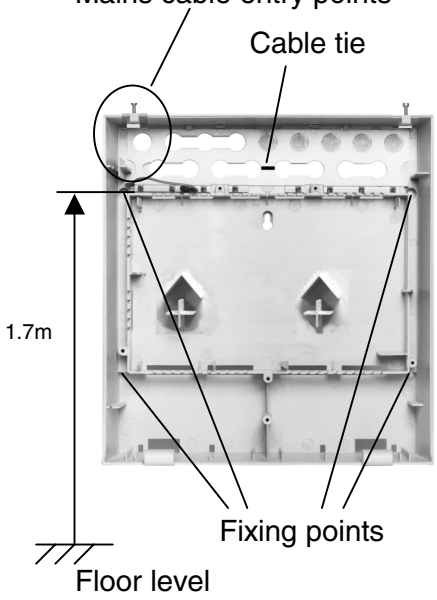
Cable entry points



Gland plate



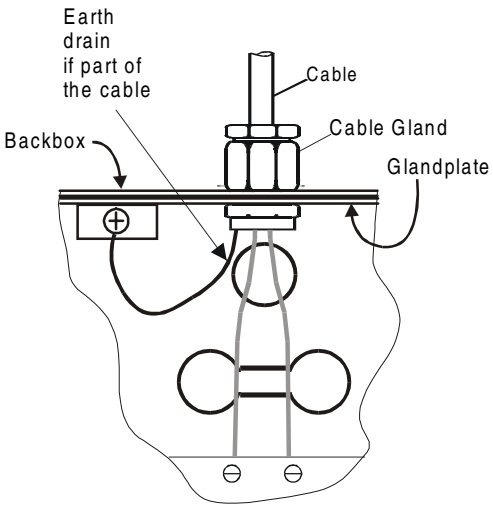
Mains cable entry points



Panel dimensions:
Height 375mm
Width 355mm
Depth 115mm

Ensure there is at least 100mm clearance around each side of the panel. Also there must be sufficient space beneath the panel assembly to allow the door to hang open.

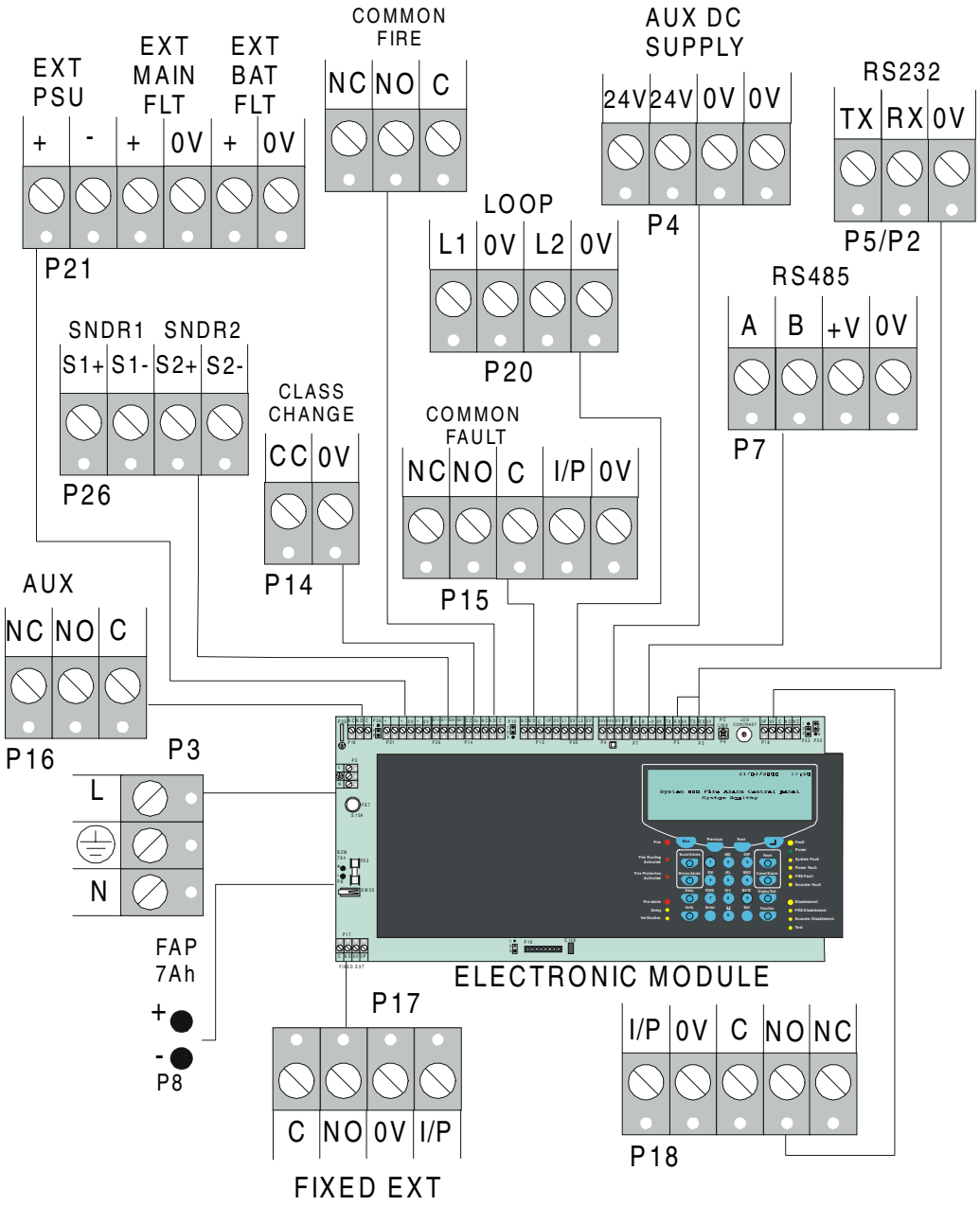
- Knockout the required cable entry points from the backbox or where appropriate snap off the required cable entry strips from the backbox.
- For cable entry from top of enclosure:
  - Cut the *cable tie* and remove the gland plate from the back face.
  - Fit *gland plate* to the inside top face of the enclosure, with *earth terminals* towards the front of the enclosure.
- Using the *panel wall fixing template* mark the four fixing centres on the wall. Note the panel's top fixing points should be 1.7m above floor level to the top fixings.
- Fix the *panel* to the wall surface using suitable fixtures to support the full assembly.
- Make use of all four fixing points when securing the *panel* to the wall.
- Re-fit the *door* to the *backbox.*
- Fit the *electronic module* to the *back box.*
- Terminate all the external cables coming into the *panel* at required cable entry points.
- Mark the cables for connection to the appropriate terminal block, see cables and wiring details.



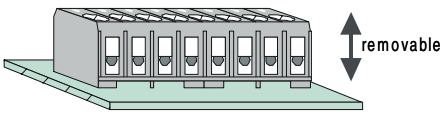
Connecting external circuits

TIP To ease wiring, the terminal blocks can be removed from the electronic module.

Terminals



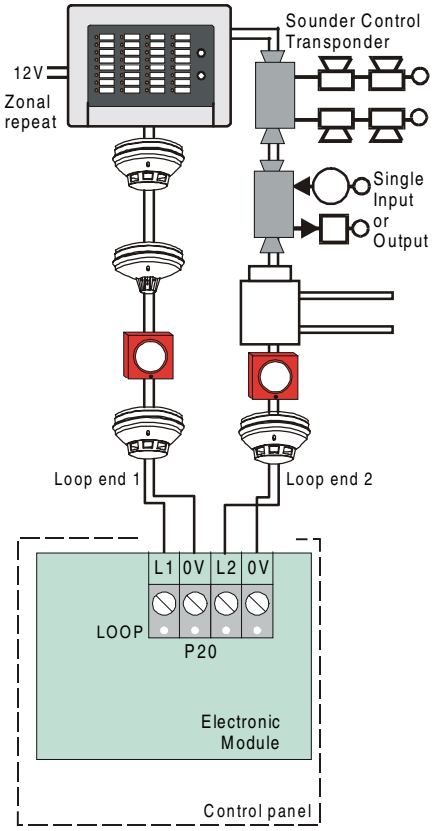
Removable terminals



To ease installation the terminal blocks on the *electronic module* can be unplugged from the board, the exception is the *mains* terminal block, which is fixed and cannot be removed from the board.

External circuits

Loop circuit



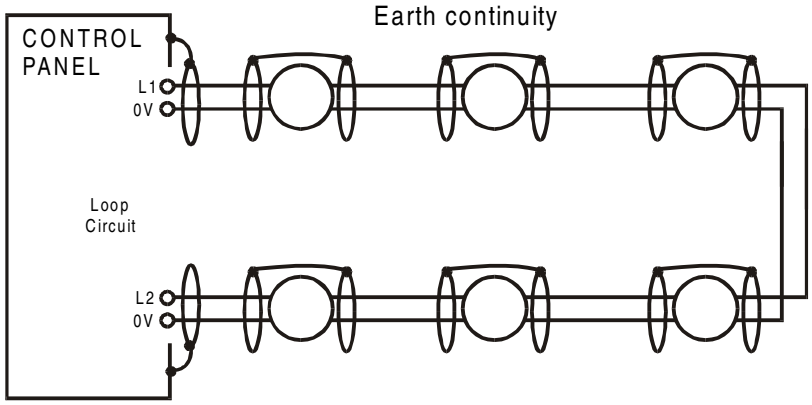
The loop circuit of a system 800 can accommodate 127 devices, such as conventional detectors fitted to addressable bases, manual call points, zonal indicator units and sounder control transponders.

Data:

- Loop length 1Km

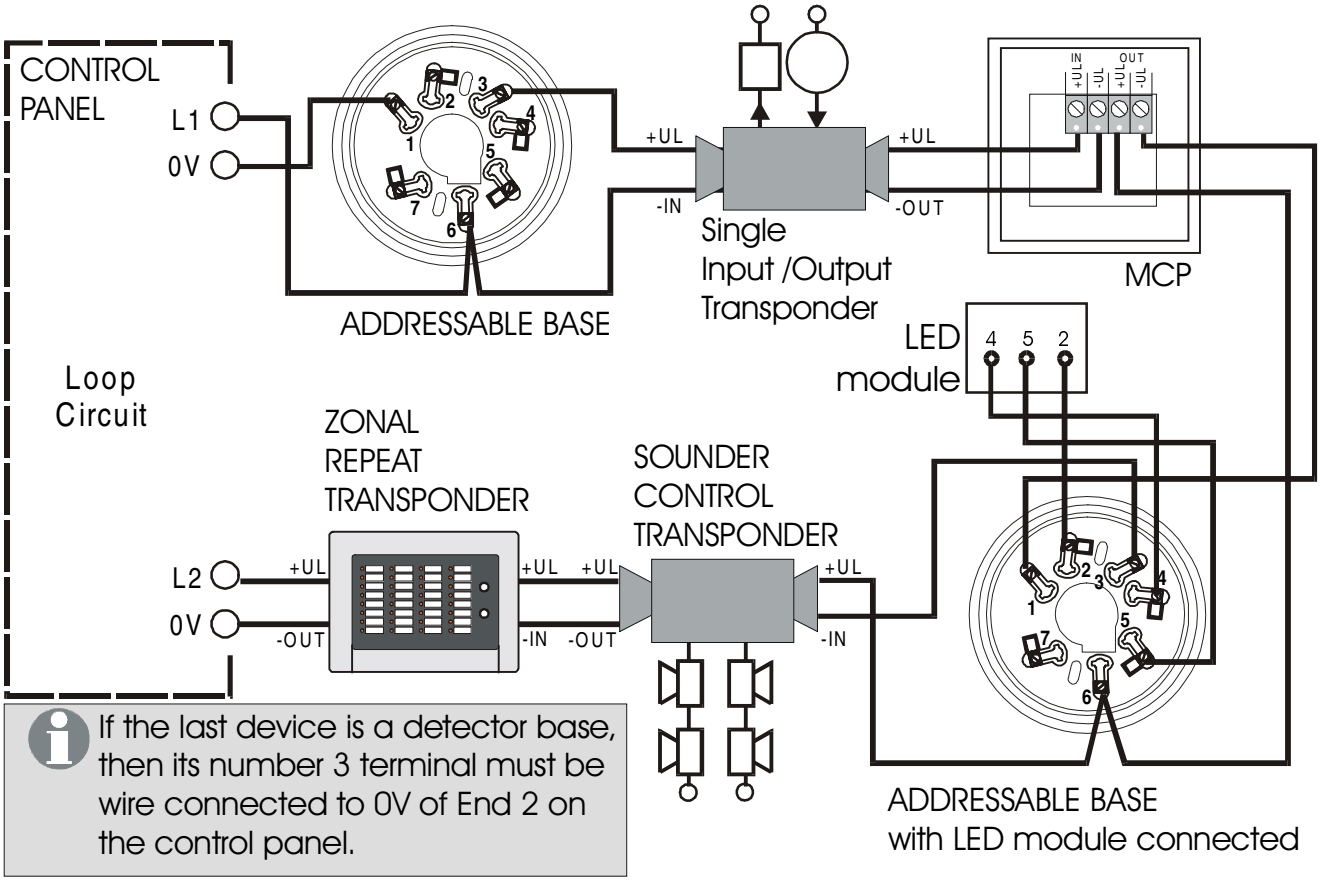
Equipment	Quiescent current
Ionisation smoke	30µA
Optical smoke	60µA
Heat	20µA
Rate of Rise	20µA
Detector base	50µA
Manual Call Point	45µA
Control panel	50mA

Loop earth continuity



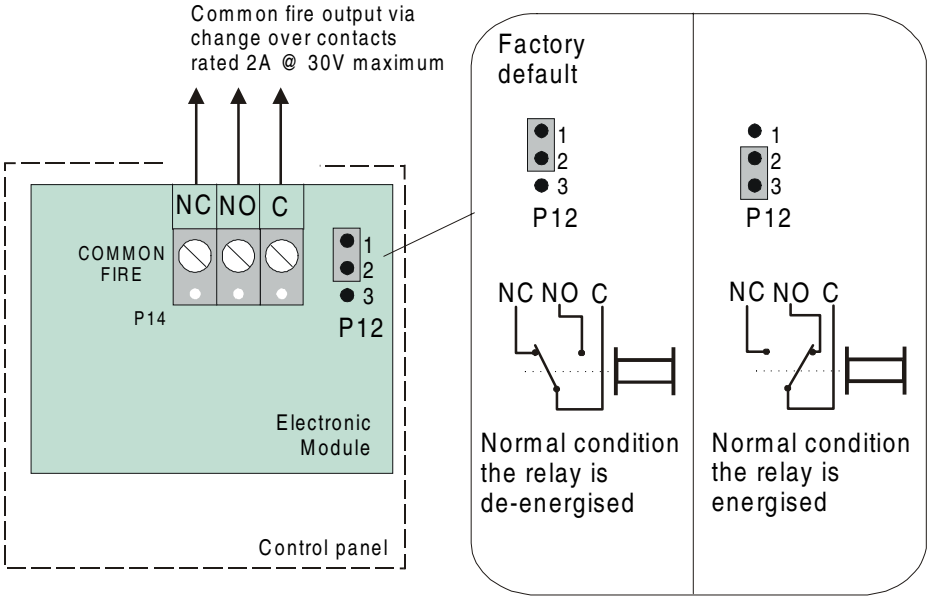
The cable earth (screen) must be continued through each device on the loop circuit and to a panel earth point on the gland plate.

Loop device wiring



Common fire output

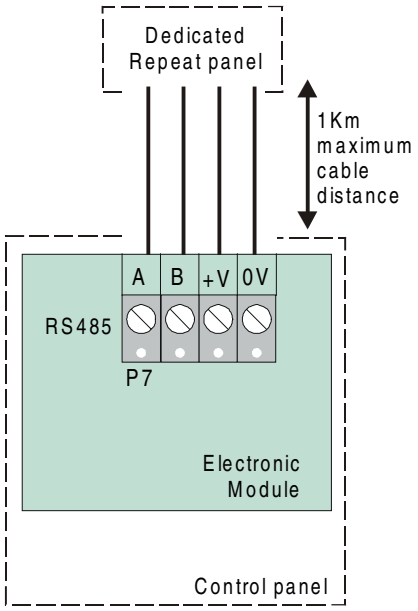
The system 800 panel provides a common fire output via change over contacts rated 2A @ 30V. A fire relay operates the change over contacts. Setting a hardware link for normally energised or de-energised state can configure the relay operation.



Repeat panel connection

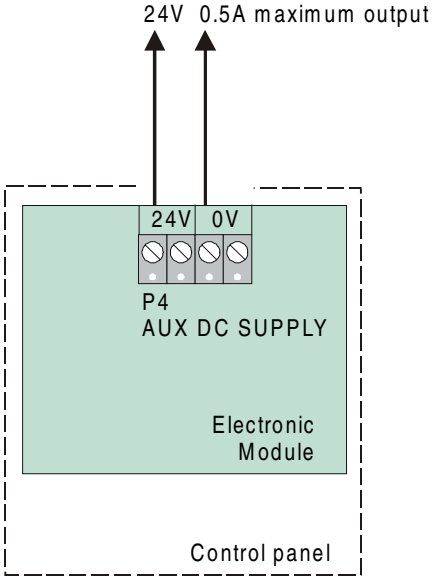
This facility is not yet available

The system 800 panel can accept connection of up to two dedicated repeat panels using the RS485 terminals.

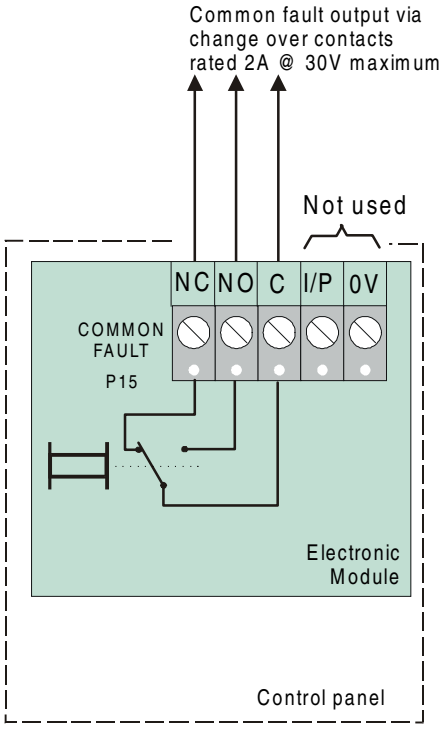


24V Power output

The system 800 panel has a 24V-supply output to supply power to external equipment. The output will supply 24V at 0.5A maximum.



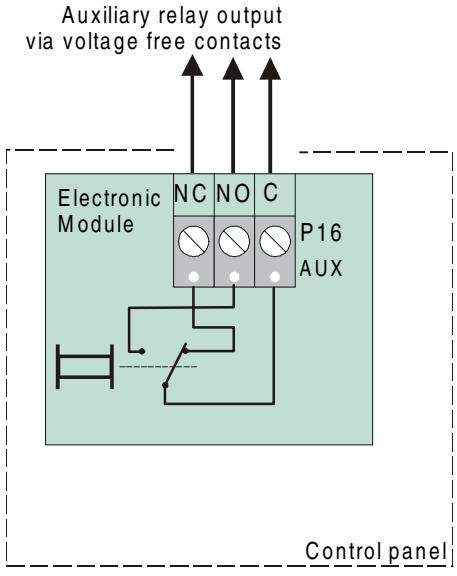
Common fault output



Contacts shown with the relay normally energised, this is the normal operating state.

The system 800 panel has a common output that operates when the panel goes into a fault condition. The contacts are shown in their normally energised position and are rated 2A at 30V maximum. The contacts can be used to switch external equipment on occurrence of a fault via the voltage free contacts. The fault output can be controlled using the fault routing facility.

Auxiliary relay output



Factory default: Auxiliary relay will energise with a fire event and is reset with system reset

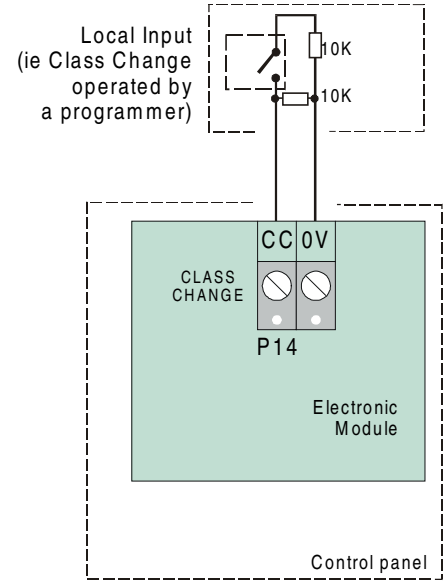
The system 800 panel has an auxiliary relay that can operate when a fire event is detected in the system (default setting). The relay contacts are rated 2A @ 30V maximum. This output can be used to signal external equipment in the event of a fire in the system. The relay is is automatically reset with the following settings:

Relay resets with ↓	Common			
	Pr	Fi	Fa	Di
System reset	✓	✓		
Silence Alarms	✓	✓		
Fault removed			✓	
Disablement removed				✓

Pr – prealarm
Fi – Fire
Fa - Fault
Di - Disablement

In addition to the fire mode of operation, it is possible to configure the relay to operate with a prefire, fault or disablement conditions.

Local input



The local Input can be configured as a Class Change, Fire or Evacuate input.

The system 800 panel has a local input that can be configured as a:

- class change
- fire input
- evacuate input
- switched OFF

As a **class change** input the system alarm sounders are used for class change application, such as in an educational establishment like school or college.

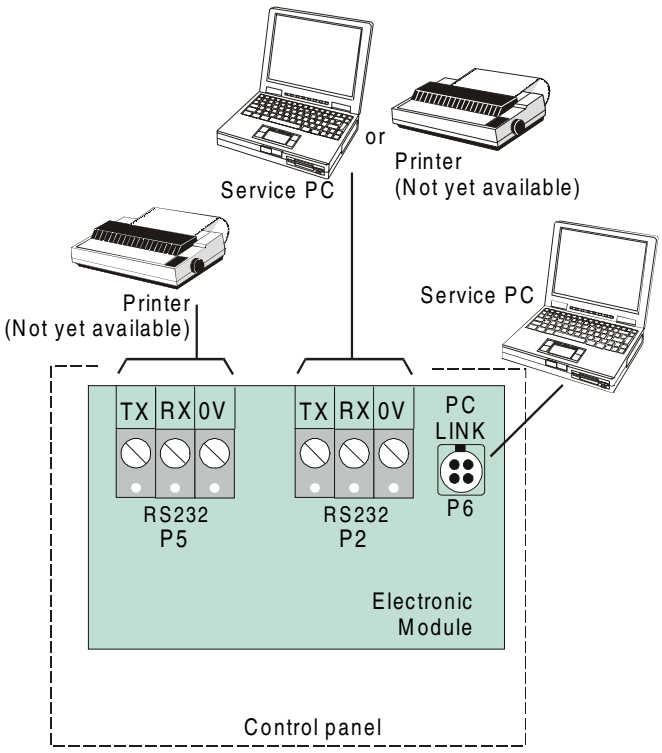
As a **fire input** the panel interprets this as a fire event and the panel goes into fire condition. The alarm sounders in the system operate as per a fire event from a device on the loop.

As an **evacuate input** the panel interprets this as a sound alarms signal and operates the alarm sounders in the system.

Additionally the local input can be enabled or disabled using the menu controls at the panel.

If configured as a fire input the panel can put the input into a Test State.

RS232 interface



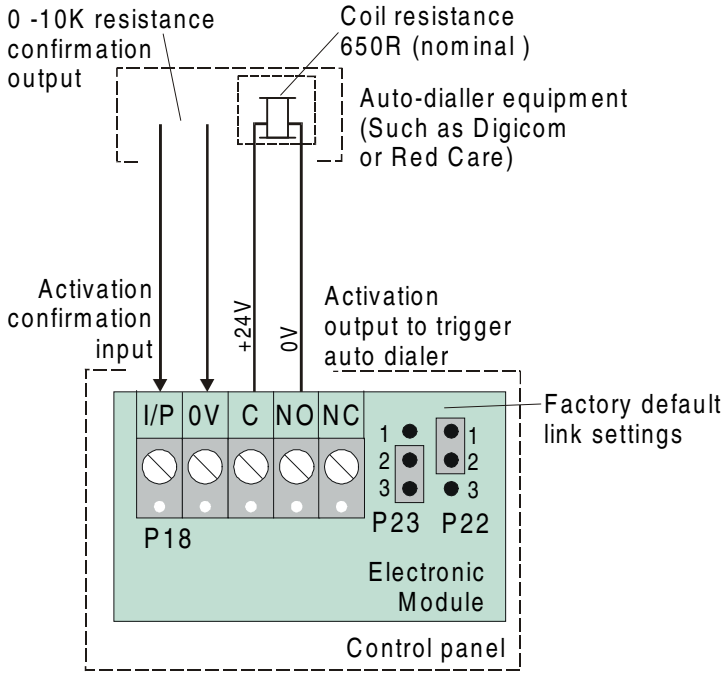
Terminals P2 and P6 share a dedicated RS232 which can be connected to either a Service PC or Printer

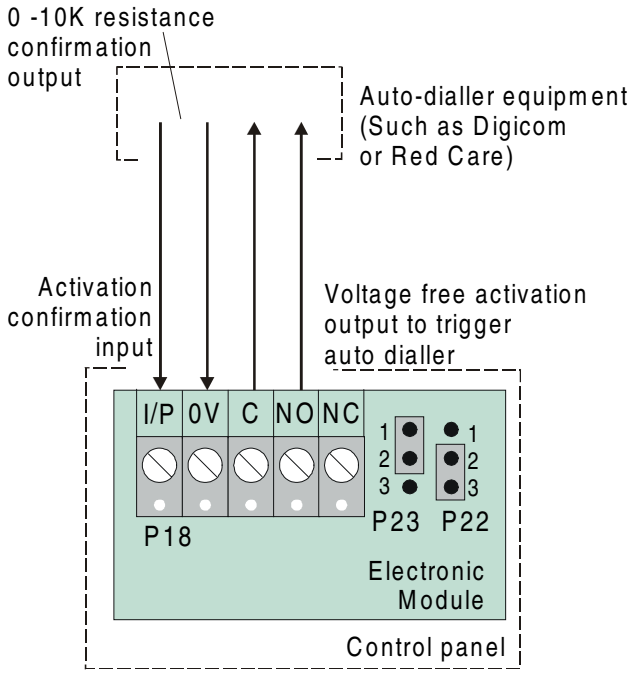
The system 800 panel has a RS232 interface which can be used to connect the service PC during commissioning, for labelling devices and zones in the system.

The RS232 will facilitate the connection of a printer for printing system events; this is not yet available.

The terminal block P2 and connector P6 share a dedicated RS232 and only one of these can be used at any one time.

Fire routing equipment





The system 800 panel can activate fire routing equipment, such as an auto dialer in the event of a fire condition in the system. The panel can be configured to output either a voltage free signal or a 24V output to trigger the external equipment.

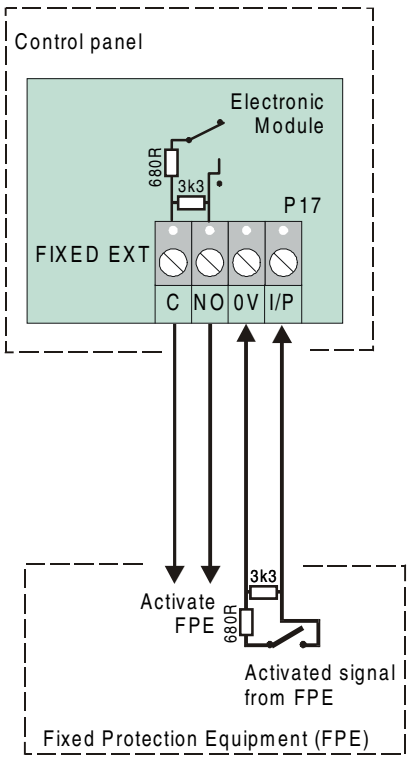
Using the menu controls at the panel the fire routing equipment operation can be:

- Manually activated or de-activated
- Output can be enabled or disabled
- A delay of up to 10 minutes can be set up before automatic output action
- The monitoring of the output can be enabled or disabled.

Fire protection equipment

(This facility is not yet available)

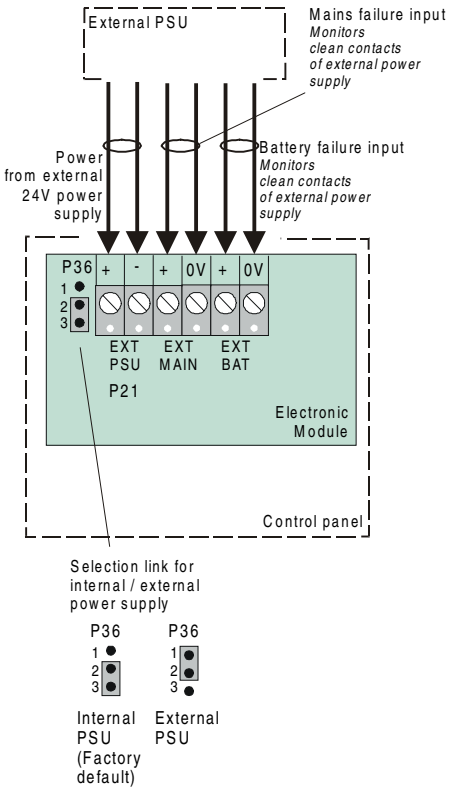
The system 800 panel has a fire protection equipment output to trigger fixed extinguishing equipment.



External power supply for alarm sounders

The system alarm sounders can be configured to operate from the on board power supply or an external power supply, by setting a link on the electronic module.

The panel is able to monitor the condition of the battery and mains supply of the external power supply unit via clean contacts. A closed clean contact at the power supply equipment is a fault signal to the control panel.



Commissioning process

1

Without any power applied to the panel:
1. Verify the continuity of the loop circuit wiring,
   The cable resistance should be 13ohms max. at 1Km.
   DO NOT UNDERTAKE HIGH VOLTAGE TESTS WITH WIRING CONNECTED TO THE LOOP DEVICES, SUCH AS TO THE BASE.

2. Verify the continuity of the sounder circuit wiring.
   With circuit connected the 10Kohms end-of-line resistance can be measured.

2

Connect the mains and battery supply to the panel and once powered up:
1. Carry out a Display test accessible at access level 2 and check all the indicators are working.

2. Setup the system clock, accessible at access level 3.

3. Carry out temporary disconnection and re-connection of battery, mains supply and sounder circuits and check fault indications are given of disconnections.

3

Connect the loop circuit:
1. Check the address allocation with only loop end-1 connected, note a loop open circuit fault is displayed.
   Repeat the test with only loop end-2 connected and then with both ends connected.

2. Carry out open circuit and short circuit tests on the +ve and -ve lines of the loop circuit, re-allocate the loop after each test.

3. Re allocate the loop, configure the Hardware link to allow data to be saved at the panel and save the loop map data to the panel EEPROM.

4

Configuration:
1. Assign devices to zones

2. Label devices and zones.

3. Connect, configure and test other equipment connected to the panel.

4. On completion of changes to configuration data and with data saved to the EEPROM, reset the hardware link to position 2-3 to write protect the EEPROM.

5

Fire plan:
1. Test the fire plan.

2. Check alarm sound levels in all areas of the building(s).

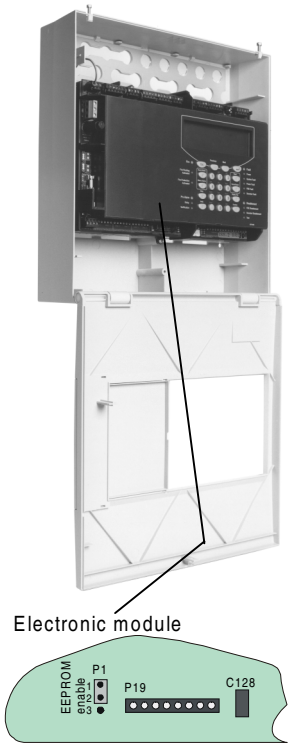
6

Handover:
1. Ensure all interested parties are informed the fire alarm system is active.

2. Fill in the log book and provide advise on user responsibility and the need to maintain the system in accordance with BS5839:Part 1.

Hardware link

On making changes to the panel set up the modified entries must be saved to the EEPROM located inside the panel. To allow the changed data to be saved to the EEPROM, a hardware link must first be configured.

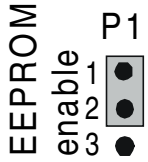


A trained engineer must carry out any changes to the system configuration.

- Open the panel door using the *allen key* supplied in the spares pack.

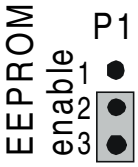
  The hardware link is located mid-way on the bottom face of the electronic module.

To allow data to be saved to EEPROM



- Configure the link to position 1-2.

To write protect EEPROM



- Configure the link to position 2-3.

Always leave the EEPROM link in the protected position after saving data.

Power up

To power up the panel connect the mains and battery supply.

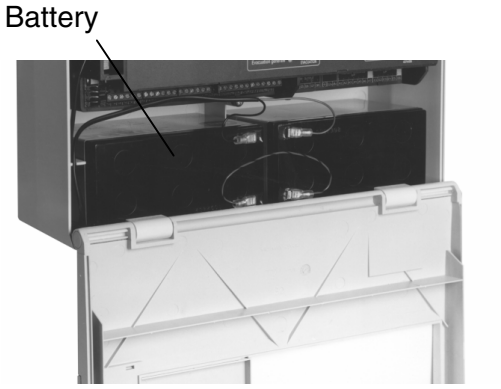
- Fit the batteries in to the panel, observing the location and orientation of battery installation.
- Connect the wires from the *electronic module* to both the batteries.
- Ensure the battery link is fitted.

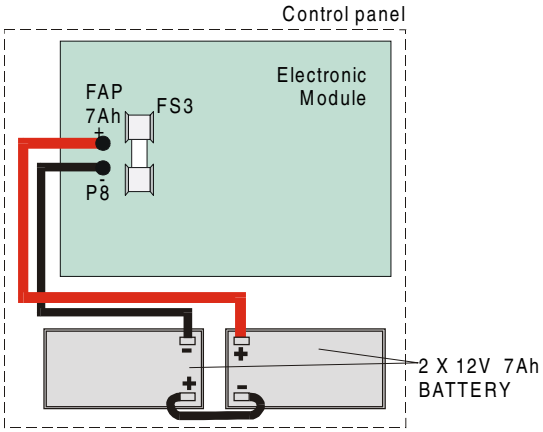
The panel will not power up on battery supply alone. However in the event of mains failure the battery will maintain a standby supply to the panel.

Battery connection

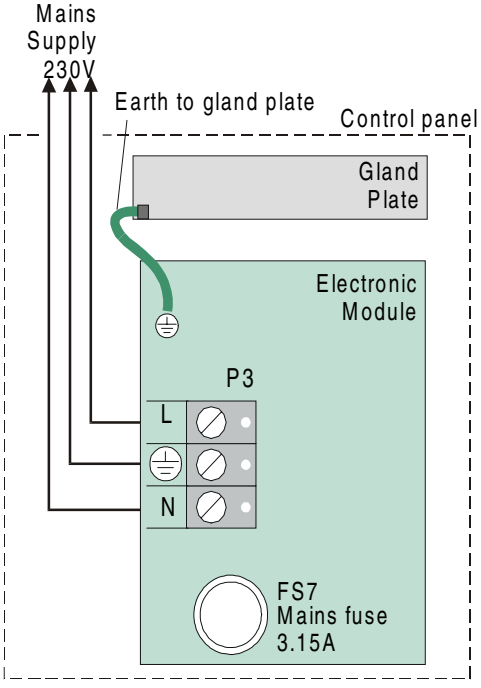
CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.





Mains supply connection



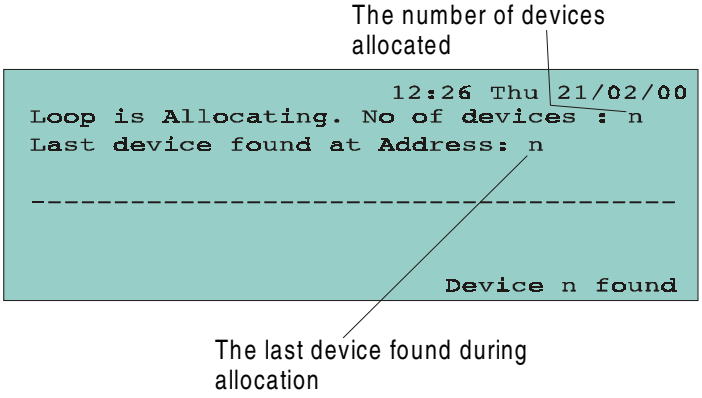
To prevent serious injury, ensure the mains supply to the control panel is isolated until required.

A qualified person in accordance with the current regulations must make the mains supply connection to the control panel. The mains to the panel must be via a dedicated 3A fused spur unit, marked in red FIRE ALARM – DO NOT SWITCH OFF.

Power up indications and address allocation

On powering up the panel the display shows messages of address allocation and the power on indicator is lit.

Power

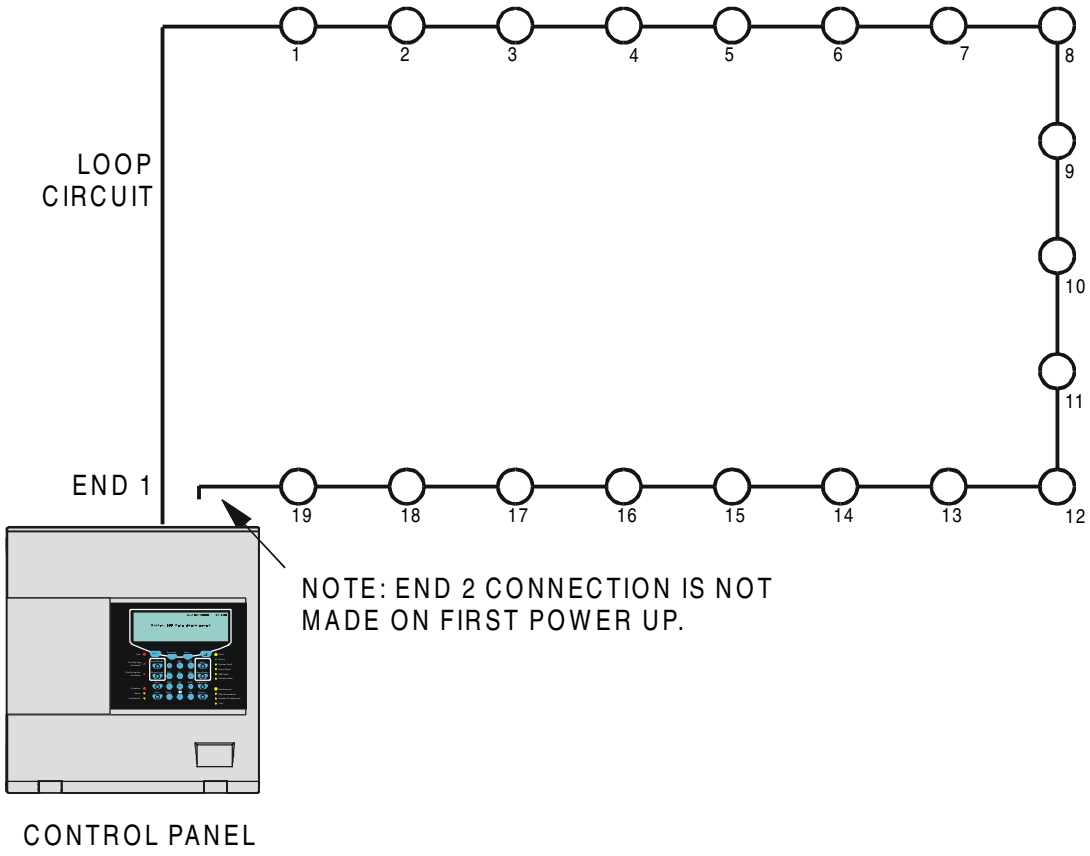

The number of devices allocated
12:26 Thu 21/02/00
Loop is Allocating. No of devices : n
Last device found at Address: n
Device n found
The last device found during allocation

The allocation process starts automatically and thereafter the fire detection. The loop is fully operational and requires no manual intervention to start fire detection.

Tip — The sounder control transponder faults are latching faults and will require a panel reset to remove the fault at the transponder.

Allocation process

The addresses are allocated to each device on the loop starting from End 1, in a numerical order, to End 2.



Menu map and access levels

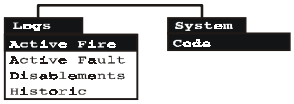
Access level 1 = General mode
Access level 2 = Security mode
Access level 3 = Customer mode
Access level 4 = Engineering mode

The menu map below shows the functionality available to the user at various access levels.

To gain access to the panel controls and menu options, the user must enter the appropriate code for the desired access level.

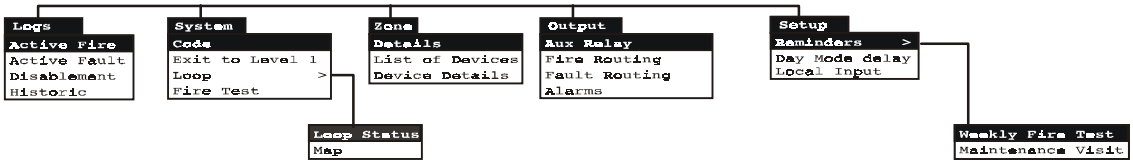
A2min, A3min and A4min signify minimum access level required for the operation.

Menu map at A1 Access level 1 (No code required)



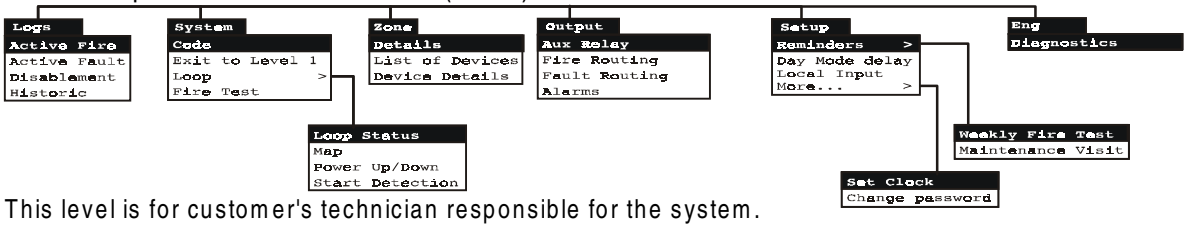
At this level access is available to the *system logs, coded entry to other levels, cancel buzzer* operation and if configured the *display test* can also operated.

Menu map at A2 Access level 2 (Code 2222)



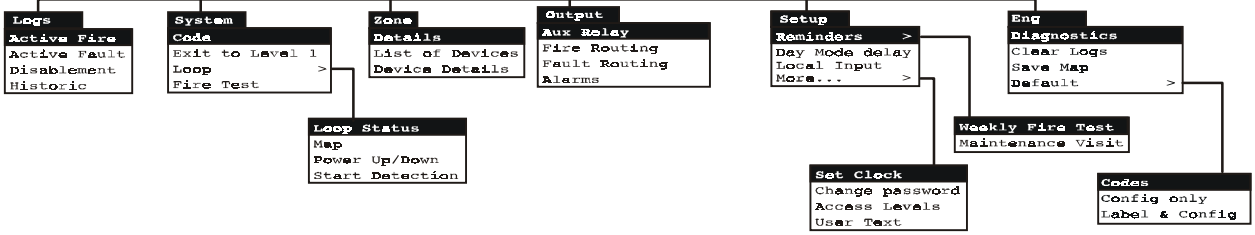
This level is for security personal.

Menu Map at A3 Access level 3 (3333)



This level is for customer's technician responsible for the system.

Menu Map at A4 Access level 4 (4444)

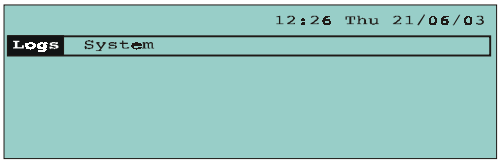


This level is for engineering use only. **At this level the loop is disabled and events are not detected.**

Operating instructions

To select a menu option

Press to view top level menu



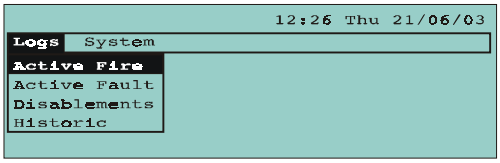
Press to enter a selection

Press to highlight option

Previous **Next**

Press to return to previous menu level

Esc



To carry out a display test

(A coded entry may be required for this command)

NOTE: **Display test** is not possible if the menu or a form is displayed.

A2 *or* ***A1*** *if configured*

Esc

Display Test

All the LEDs illuminate for a short duration

Functions that are not accessible at an access level

If you select a function that is not accessible at the current access level then you will get the following message:

```
You have attempted a function which is
not available at this access level.

Please enter password: [          ]
and then perform the desired function

Enter Pasw'd and press ↵ or Esc To Exit
```

To view active Fire events

A1

```
 2 ZONES IN FIRE        11:53 Thu 22/06/03
Fire log ( 1)
1:                   08:35:29 Tue 22/06/03
 Dv 005                        device label
 Zn                              Zone label


Esc To Exit
```

To view active Fault events

A1

```
FAULT log (n)          11:53 Thu 22/06/03
1:                  08:47:11  Thu 14/09/03
 Loop device removed
 device label



Previous/Next - More faults,Esc To Exit
```

To view Disablements

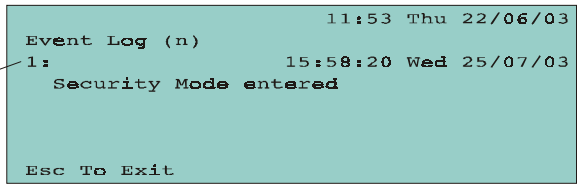
A1

```
                              11:53 Thu 22/06/03
Disablement Log (n)
1:                    09:46:10 Thu 22/06/03
  Loop stopped



Esc To Exit
```

To view Historic events

A1

Event 1 - latest event



To view the software version

A3

Esc

Function

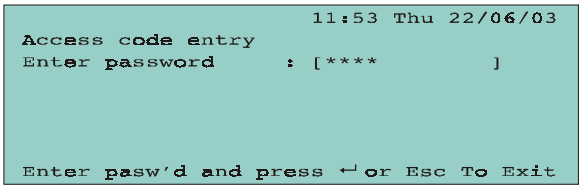
Viewing the software version is only possible at access level 3, out of the menu mode.

To enter an access level (eg 2, 3 or 4)

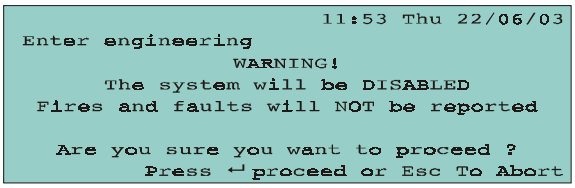
A1

Factory default codes are for:
Access level 1 : None
Access level 2 : 2222
Access level 3 : 3333
Access level 4 : 4444

Enter the numerical password



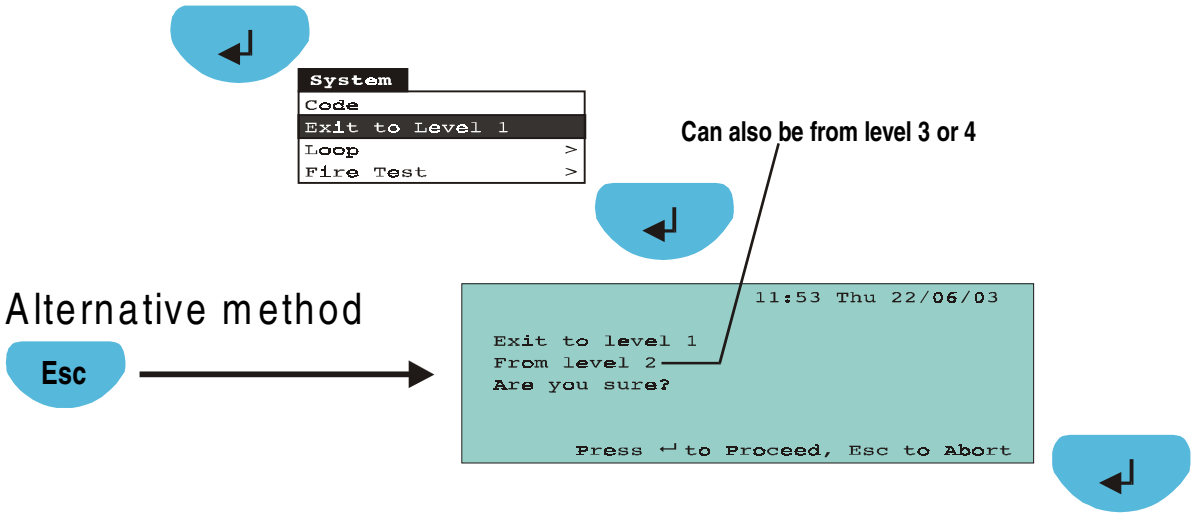
For **A4** *only*


11:53 Thu 22/06/03
Enter engineering
WARNING!
The system will be DISABLED
Fires and faults will NOT be reported
Are you sure you want to proceed ?
Press ↵proceed or Esc To Abort

Disablement

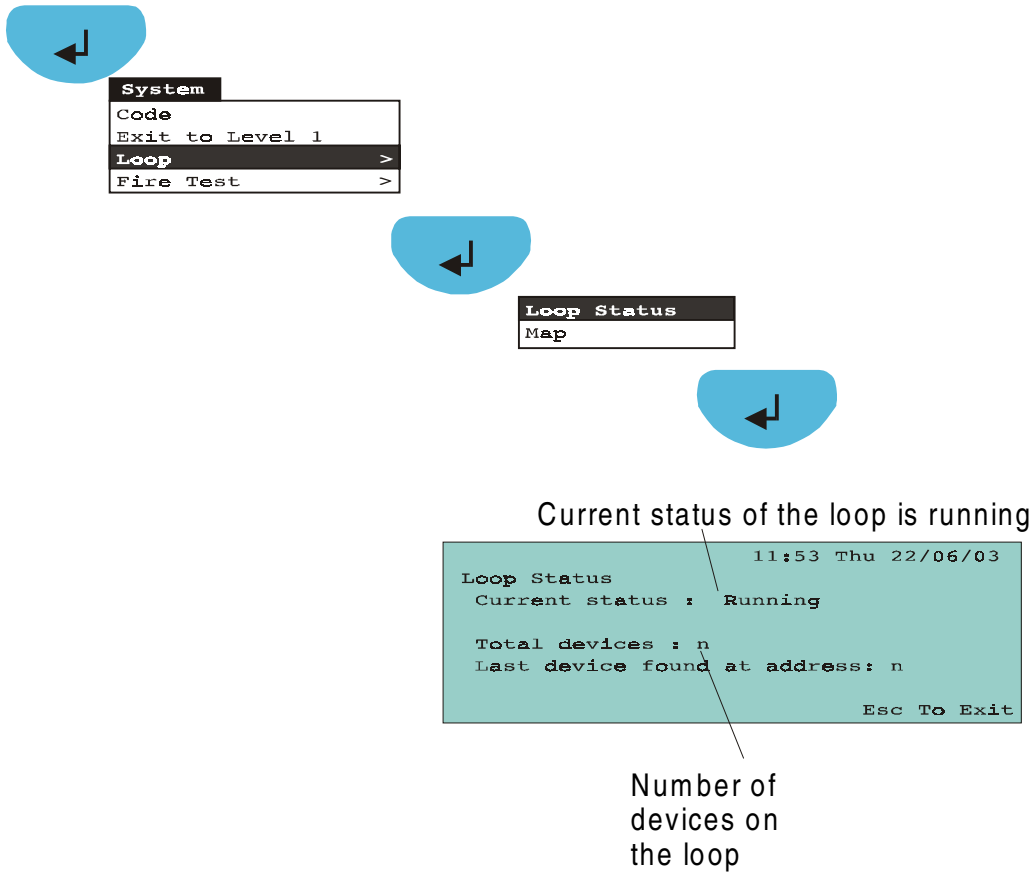
To exit to access level 1

A2, A3 or A4



To view loop status

A2



To activate Delay Mode faciity

A2

Esc

Delay

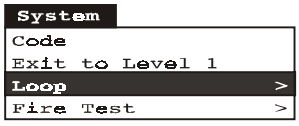
The Delay function will only operate if the Delay timeout period was pre-configured to a value greater than 0 hours.

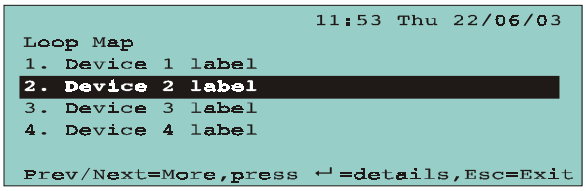
Delay

Delay Mode can be configured to be active for up to 8 hours

To view loop map

A2





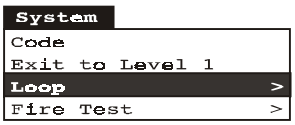
By pressing the Enter button on a highlighted device it is possible to view device details, see device details.

Press Esc to return to loop map

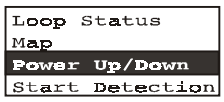
To power down the loop circuit

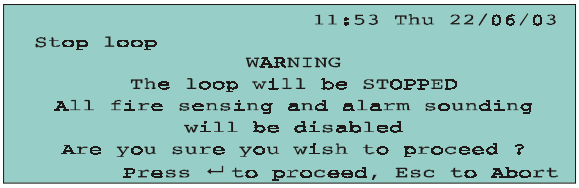
(assuming the loop is powered up)

A3

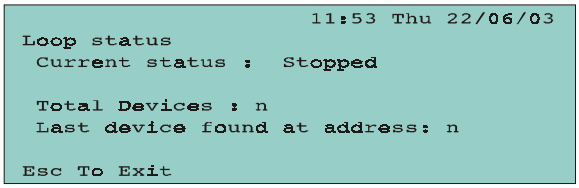


It is not possible to power down the loop when the panel is in fire condition or test mode.



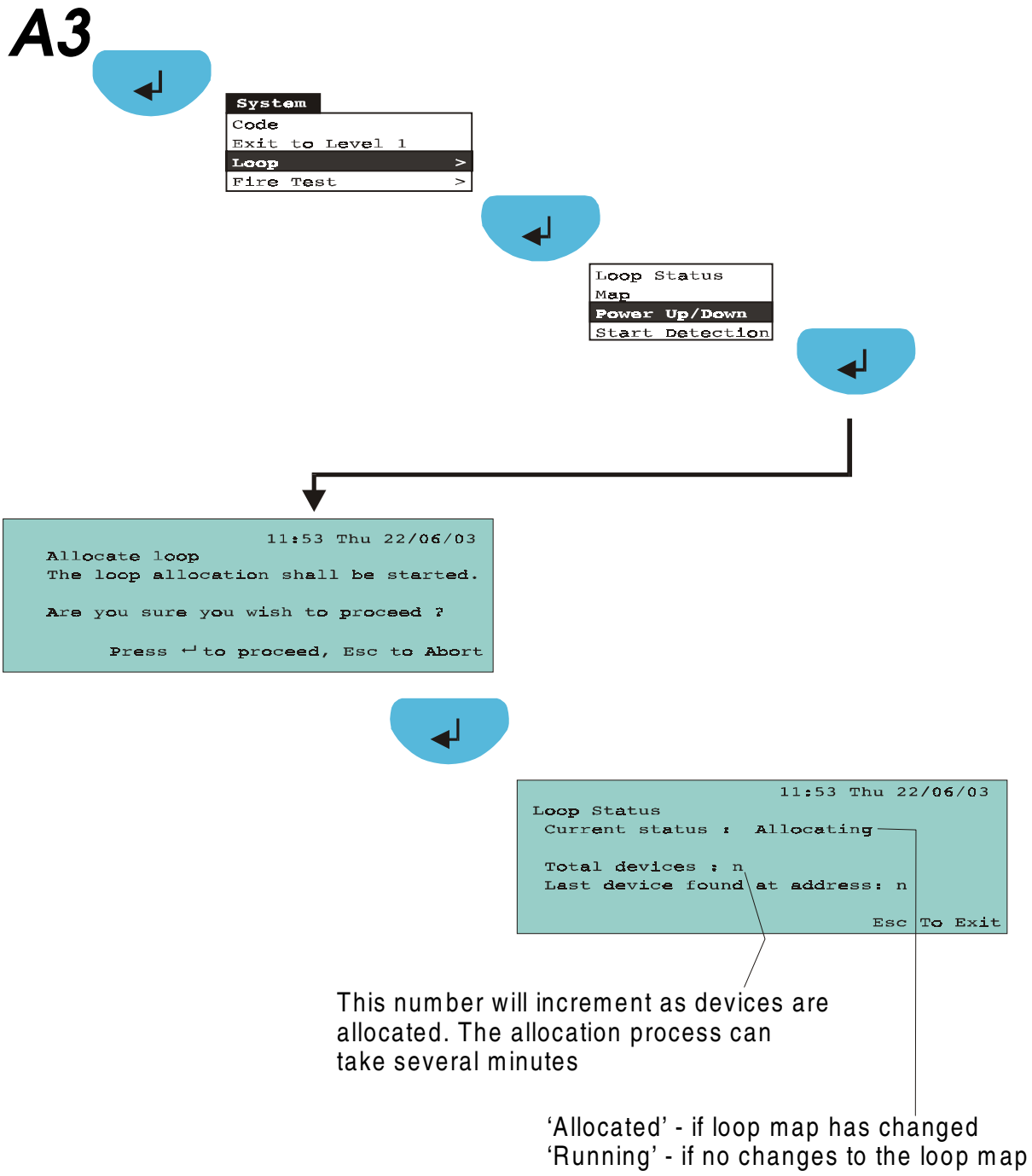

11:53 Thu 22/06/03
Stop loop
WARNING
The loop will be STOPPED
All fire sensing and alarm sounding
will be disabled
Are you sure you wish to proceed ?
Press ↵ to proceed, Esc to Abort

Disablement



To power up the loop circuit

(assuming the loop is powered down)

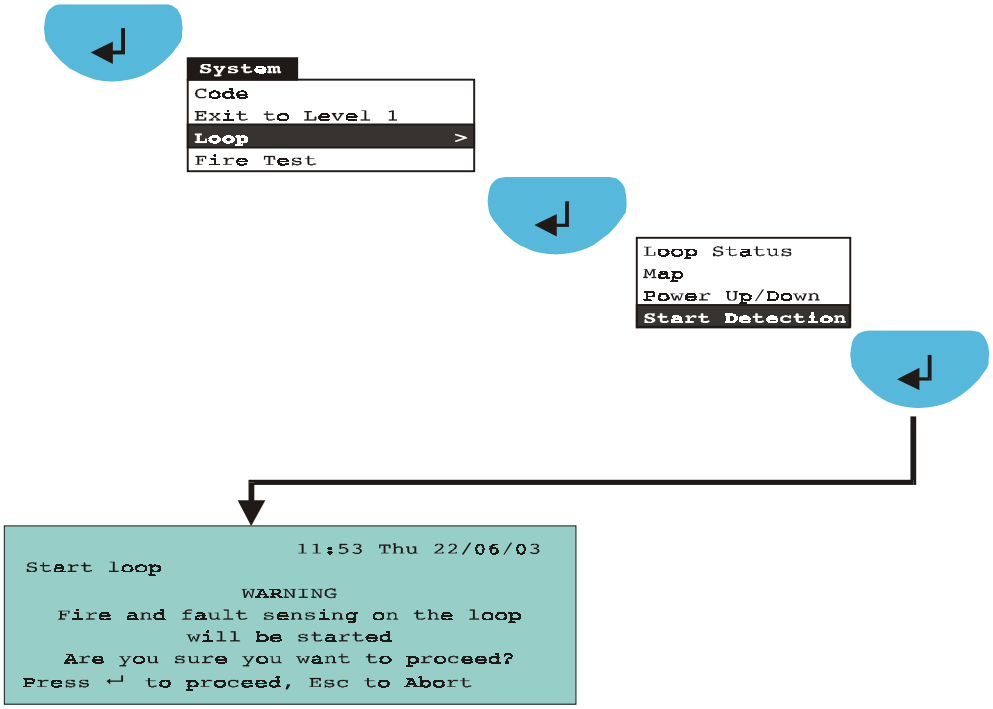

A3
System
Code
Exit to Level 1
Loop >
Fire Test >
Loop Status
Map
Power Up/Down
Start Detection
11:53 Thu 22/06/03
Allocate loop
The loop allocation shall be started.
Are you sure you wish to proceed ?
Press ↵ to proceed, Esc to Abort
11:53 Thu 22/06/03
Loop Status
Current status : Allocating
Total devices : n
Last device found at address: n
Esc To Exit
This number will increment as devices are allocated. The allocation process can take several minutes
'Allocated' - if loop map has changed
'Running' - if no changes to the loop map

If the loop map has changed, only then the loop detection process must be started manually, see *To start detection process.*

To start detection process on the powered up and allocated loop

If the loop map has changed on a manually powered up loop then it is necessary to manually start the detection process.

A3

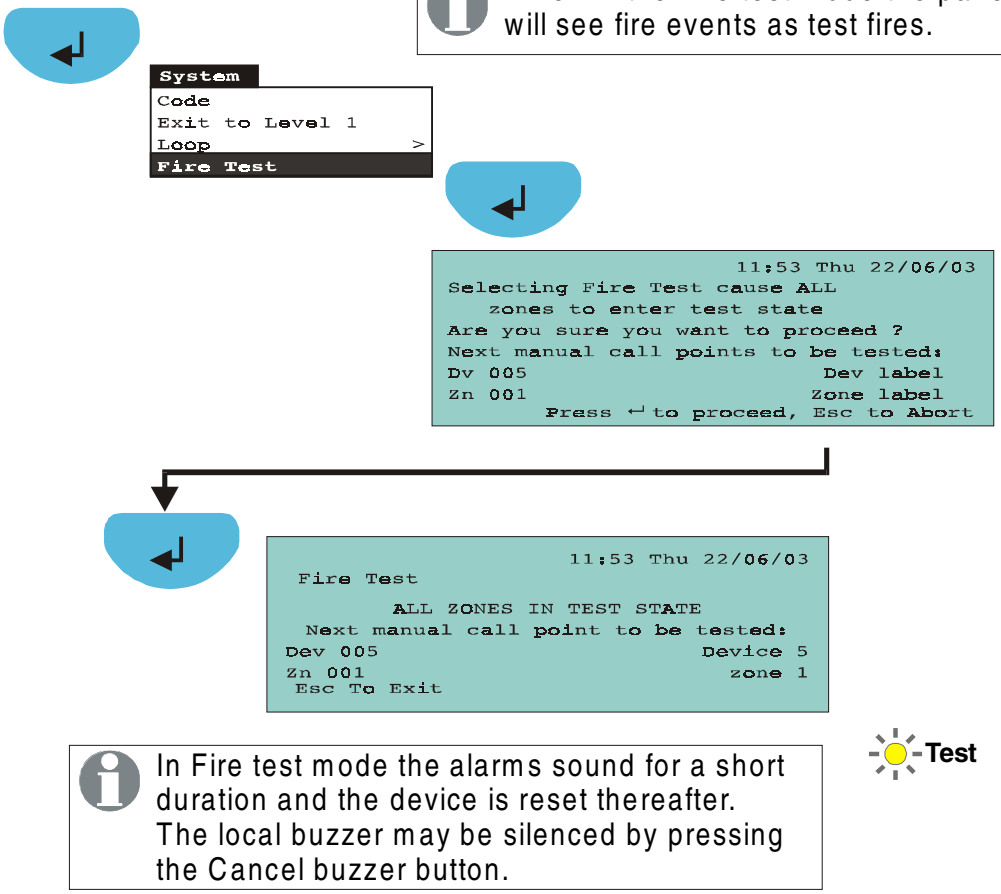


If the panel is at access level 4 the detection process will be temporarily stopped until you exit to level 1, 2 or 3.

To identify MCP required to be fire tested on a weekly test

A2

When in the Fire test mode the panel will see fire events as test fires.

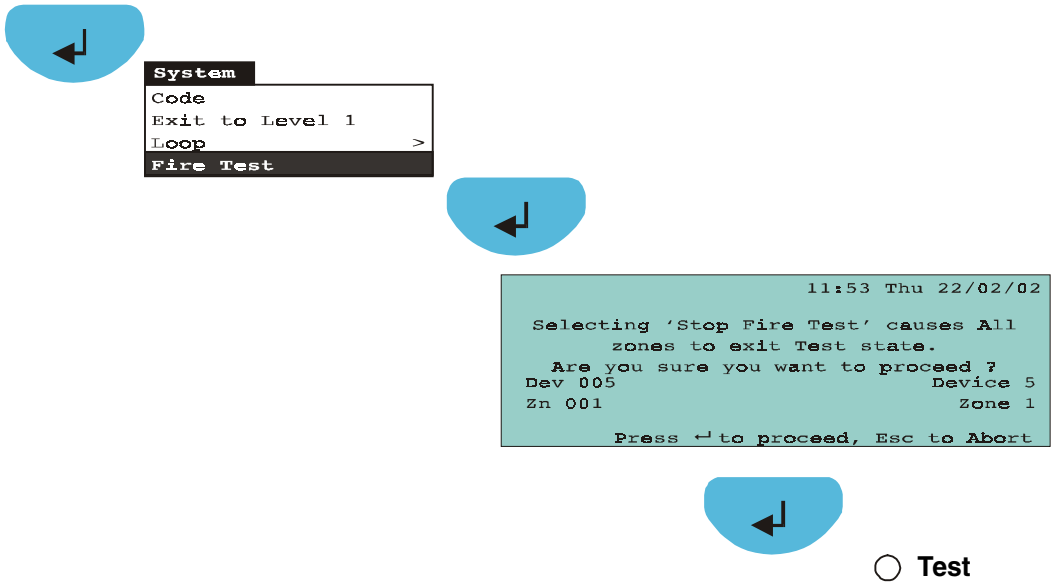

System
Code
Exit to Level 1
Loop >
Fire Test
11:53 Thu 22/06/03
Selecting Fire Test cause ALL
zones to enter test state
Are you sure you want to proceed ?
Next manual call points to be tested:
Dv 005 Dev label
Zn 001 Zone label
Press ↵ to proceed, Esc to Abort
11:53 Thu 22/06/03
Fire Test
ALL ZONES IN TEST STATE
Next manual call point to be tested:
Dev 005 Device 5
Zn 001 zone 1
Esc To Exit

In Fire test mode the alarms sound for a short duration and the device is reset thereafter. The local buzzer may be silenced by pressing the Cancel buzzer button.

Test

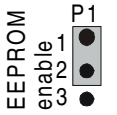
To exit Fire test mode (assuming Fire Test is On)

A2



Test

To edit a zone label



A2min

If a *zone label* is left blank then the *device label* is displayed in the event of a fire.

```
Zone
Details
List of Devices
Device Details
```

```
                              11:38 Thu 22/06/03
Zone [ 2]      Actions Master Alarms:[Y]
Label:[                              Zone  2]
Status: [Enabled]                In test:[NO]
Mode: [NORMAL]       Linked to zone: 0
Sectors: 99, 99, 99, 99
99, 99, 99, 99, 99, 99, 99, 99
Press↵ to Save any changes, Esc to Exit
```

Previous **Next**

Press to select [Zone] field

Select

Press select to change to a required zone number

Previous **Next**

Press to select [label] field

To edit text in a field:

Edit Press Edit button to allow label editing.

Using the numeric keypad enter the label.

	ABC	DEF
1	2	3
GHI	JKL	MNO
4	5	6
PQRS	TUV	WXYZ
7	8	9
	␣	
	0	

Each press of an alphanumeric key will scroll character string, eg each press of key 2 will scroll characters: A B C 2 a b c.

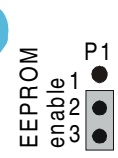
Each press of key 1 will scroll character string 1 ? , . ; & * /

Each press of key 0 will scroll character string 0 ( ) : @ [ ]

Function **To copy text**
Highlight a label field and press the Function key.

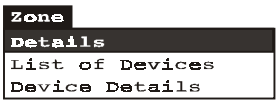
Edit **Function** **To paste text**
Highlight a label field and press edit and then the Function key.

Next If necessary, press Next to move to the next character position.

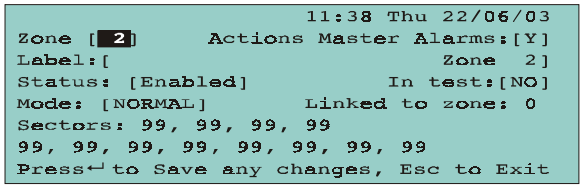


To put a zone in and out of Test mode

A2



If a zone is put into test mode the panel will see the zone fire events as test fires.


11:38 Thu 22/06/03
Zone [2] Actions Master Alarms:[Y]
Label:[Zone 2]
Status: [Enabled] In test:[NO]
Mode: [NORMAL] Linked to zone: 0
Sectors: 99, 99, 99, 99
99, 99, 99, 99, 99, 99, 99, 99
Press↵ to Save any changes, Esc to Exit

Previous **Next**

Press to select a [Zone] field

Select

Press select to change to a required zone number

Previous **Next**

Press to select In Test field [ ]

Select

Press select to toggle NO/YES

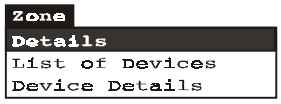
Select NO to take zone out of test or YES to put the zone in test

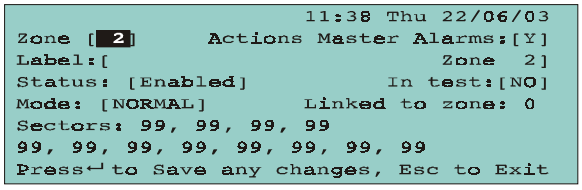
When a zone is in the test mode and a device in the zone is put into fire condition, the alarms will sound for a short duration and the device is reset thereafter.

To enable or disable a zone

When a zone is disabled the manual call points in the zone remain active and are NOT disabled.

A2




11:38 Thu 22/06/03
Zone [2] Actions Master Alarms:[Y]
Label:[Zone 2]
Status: [Enabled] In test:[NO]
Mode: [NORMAL] Linked to zone: 0
Sectors: 99, 99, 99, 99
99, 99, 99, 99, 99, 99, 99, 99
Press↵ to Save any changes, Esc to Exit

Previous **Next**

Press to select [Zone] field

Select

Press select to change to a required zone number

Previous **Next**

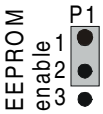
Press to select [Status] field

Select

Press Select to toggle ENABLE/DISABLE

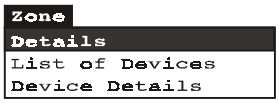
Select DISABLE to disable the zone or ENABLE to enable the zone

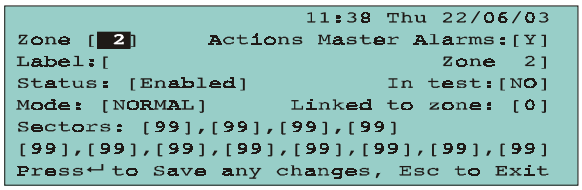
To put a zone in false alarm rejection mode



A4

Where a zone is susceptible to false alarms, a greater immunity to spurious alarms is possible by putting the zone in FA rejection mode.




11:38 Thu 22/06/03
Zone [2] Actions Master Alarms:[Y]
Label:[Zone 2]
Status: [Enabled] In test:[NO]
Mode: [NORMAL] Linked to zone: [0]
Sectors: [99],[99],[99],[99]
[99],[99],[99],[99],[99],[99],[99],[99]
Press↵ to Save any changes, Esc to Exit

Previous **Next**

Press to select [Zone] field

Select

Press Select to change to a required zone number

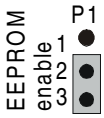
Previous **Next**

Press to select [Mode] field

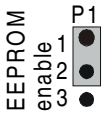
Select

Press Select to toggle NORMAL / FA-REJECTION
2-DETECTOR / 2-ZONES

Select NORMAL for normal operation,
FA-REJECTION for false alarm rejection,
to give greater immunity to spurious alarms,
 # 2 DETECTOR for two detector coincidence,
 # 2 ZONE for two zone coincidence.
expained later



To select 2-detectors or 2-zones coincidence detection



A4

The 2-detector coincidence can only be applied to the selected zone.

```
                                11:38 Thu 22/06/03
Zone [ 2 ]          Actions Master Alarms:[Y]
Label:[                                 Zone  2]
Status: [Enabled]                 In test:[NO]
Mode: [NORMAL]          Linked to zone: [0]
Sectors: [99],[99],[99],[99]
[99],[99],[99],[99],[99],[99],[99],[99]
Press↵ to Save any changes, Esc to Exit
```

If 2 zones coincidence detection is selected it is important to link the selected zone to another zone.

Previous **Next**

Press to select [Zone] field

Select

Press Select to change to a required zone number

Previous **Next**

Press to select [Mode] field

Select Press Select to toggle to NORMAL, FA-REJECTION, 2-DETECTOR / 2-ZONES.

Select :2 DETECTOR for two detector coincidence, 2 ZONE for two zone coincidence.

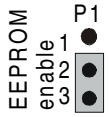
Procedures for 2 zone coincidence only.

Previous **Next**

Press to select [Linked to zone] field

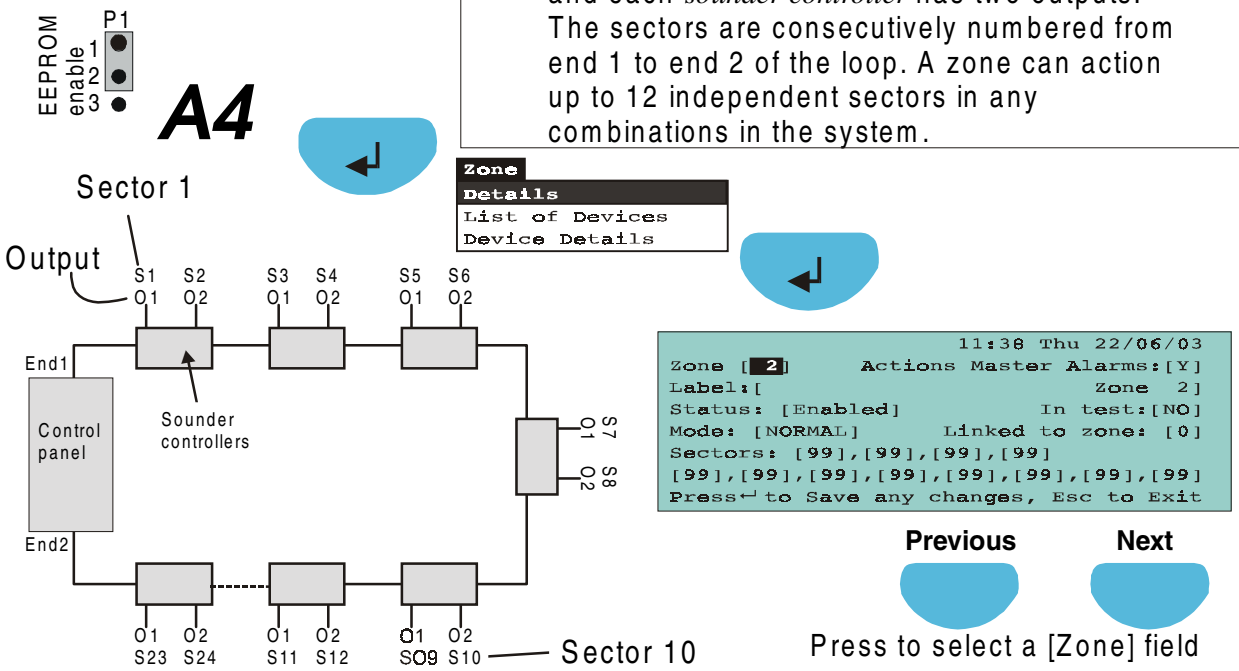
Select

Press Select to change to a required 2nd zone number of *two zone coincidence.*



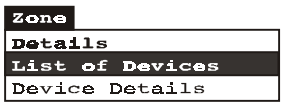
To assign a sectors to zone

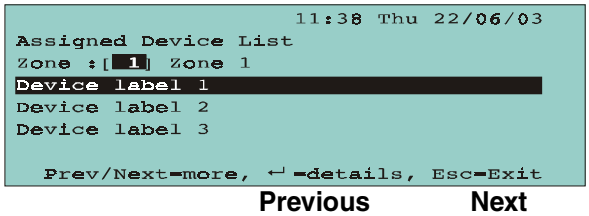
There can be a maximum of up to 24 sectors per system. A sector is an output of a *sounder controller* and each *sounder controller* has two outputs. The sectors are consecutively numbered from end 1 to end 2 of the loop. A zone can action up to 12 independent sectors in any combinations in the system.


EEPROM enable
P1
1
2
3
A4
Sector 1
Output
S1 S2 S3 S4 S5 S6
O1 O2 O1 O2 O1 O2
End1
Control panel
End2
Sounder controllers
S7 S8
O1 O2
O1 O2 O1 O2 O1 O2
S23 S24 S11 S12 SO9 S10
Sector 10
Zone
Details
List of Devices
Device Details
11:38 Thu 22/06/03
Zone [2] Actions Master Alarms:[Y]
Label:[Zone 2]
Status: [Enabled] In test:[NO]
Mode: [NORMAL] Linked to zone: [0]
Sectors: [99],[99],[99],[99]
[99],[99],[99],[99],[99],[99],[99],[99]
Press↵ to Save any changes, Esc to Exit
Previous
Next
Press to select a [Zone] field
Select
Press Select to change to a require zone number
Previous
Next
Press to highlight the first linked **Sector** field (12 fields available)
Select
Key in or press Select to enter the first linked sector number (range 1 to 24) that is required to be actioned in the event of the zone going into fire condition.
Next
Select
Highlight by pressing Next the second sector field and key in the second linked Sector number that is required to be actioned in the event of the zone going into fire condition. Repeat the procedure for other sectors required to be linked to the zone.
Set all remaining unused fields for no action, enter 00 (zero).
An entry 99 in any field will cause all the sectors to trigger in the event of fire condition in the zone.
EEPROM enable
P1
1
2
3

To view devices in a selected zone

A2





Previous **Next**

Press to select a [Zone] field

Select

Press select to change to a required zone number

Previous **Next**

Press to scroll the list

By pressing the Enter button on a highlighted device it is possible to view device details, see device details.

Press **Esc** to return to Device details

To enable / disable a device

A2

This operation will allow disablement and enablement of devices like detectors and manual call points on the loop.

```
Zone
Details
List of Devices
Device Details
```

```
                                11:38 Thu 22/06/03
Device [ 1] Details
Label:[Device label                                ]
Type   :  DETECTOR
Status:[ ENABLED]
Assigned To:
Zn: 1                                      Zone 1
Press ↵ to Save any changes, Esc to Exit
```

Previous **Next**

Press to select [Device] field

Select

Press select to change to a required device number

Previous **Next**

Press to select [Status] field

Select

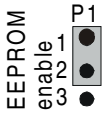
Press select to toggle ENABLE/DISABLE

Select DISABLE to disable the device or ENABLE to enable the device

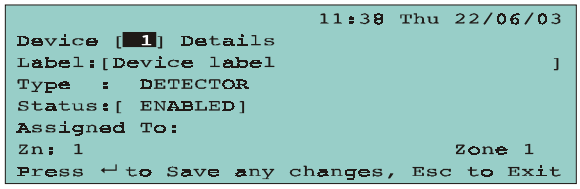
If the call point glass is broken during disablement, then the following message appears on enabling the device

```
                                11:38 Thu 22/06/03
MCP (No n) was broken whilst
     it was disabled.
Enabling this device without repairing
it will result in a fire condition
Are you sure you want to proceed?

Press ↵ to Save any changes, Esc to Exit
```

To edit a device label



A2



Previous **Next**

Press to select [Device] field

Select

Press to change to a required device number

Previous **Next**

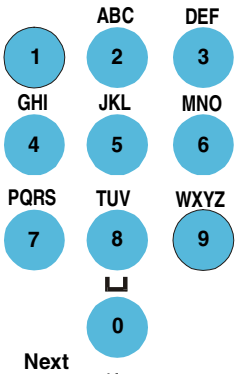
Press to select [Label] field

To edit text in a field:

Edit

Press Edit button to allow label editing.

Using the numeric keypad enter the label.



Next

If necessary, press Next to move to the next character position.

Each press of an alphanumeric key will scroll character string, eg each press of key 2 will scroll characters: A B C 2 a b c.

Each press of key 1 will scroll character string 1 ? , . ; & * /

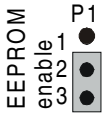
Each press of key 0 will scroll character string 0 ( ) : @ [ ]

Function **To copy text**

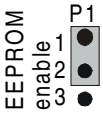
Highlight a label field and press the Function key.

Edit **Function** **To paste text**

Highlight a label field and press edit key followed by the Function key.

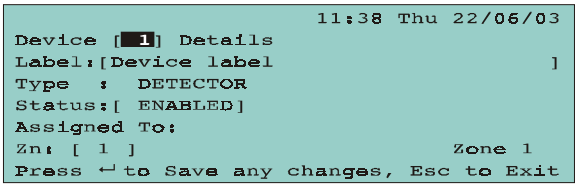


To assign a device to a zone



A4

On assigning a Sounder controller device to a zone the corresponding sectors associated with the Sounder controller are also assigned to the zone.


11:38 Thu 22/06/03
Device [1] Details
Label:[Device label]
Type : DETECTOR
Status:[ENABLED]
Assigned To:
Zn: [1] Zone 1
Press ↵ to Save any changes, Esc to Exit

Previous **Next**

Press to select a [Device] field

Select

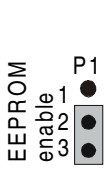
Press select to change to a required device number

Previous **Next**

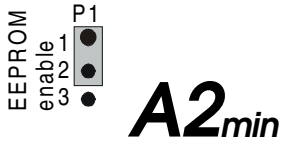
Press to [Zn] field

Select

Press select to scroll to a `Zone number` to which the device is assigned.

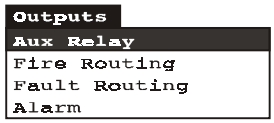


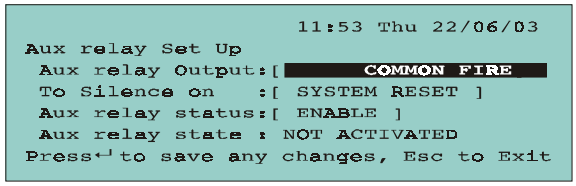
To set auxiliary relay operation (eg to operate with fire, fault, disablement, pre-alarm or off)



A2min

Only configure the hardware link when setting the **operation** of auxiliary relay.




11:53 Thu 22/06/03
Aux relay Set Up
Aux relay Output:[COMMON FIRE]
To Silence on :[SYSTEM RESET]
Aux relay status:[ENABLE]
Aux relay state : NOT ACTIVATED
Press↵ to save any changes, Esc to Exit

Previous **Next**

Press to select a field [ ]

A2 Auxiliary relay output:

Select

Press select to scroll to the required selection:

NOT CONNECTED
COMMON FIRE
(Default)
COMMON FAULT
COMMON DISABLEMENT
PRE ALARM

A2 Auxiliary relay Status:

Select

Press select to scroll to state:

ENABLE
DISABLE

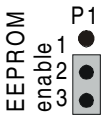
A3 To silence on:

Select

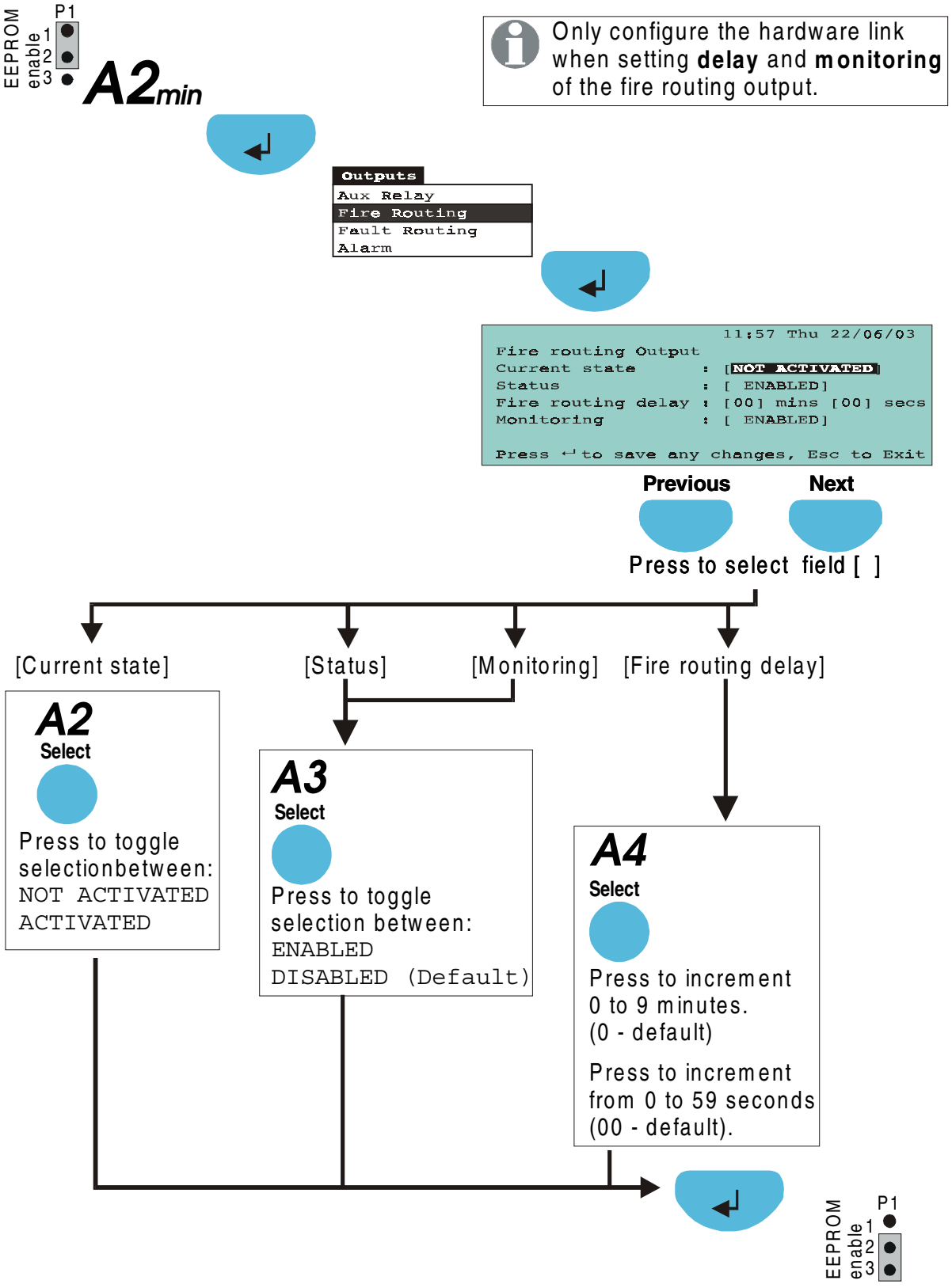
Press select to toggle selection between:

SYSTEM RESET
(Default)

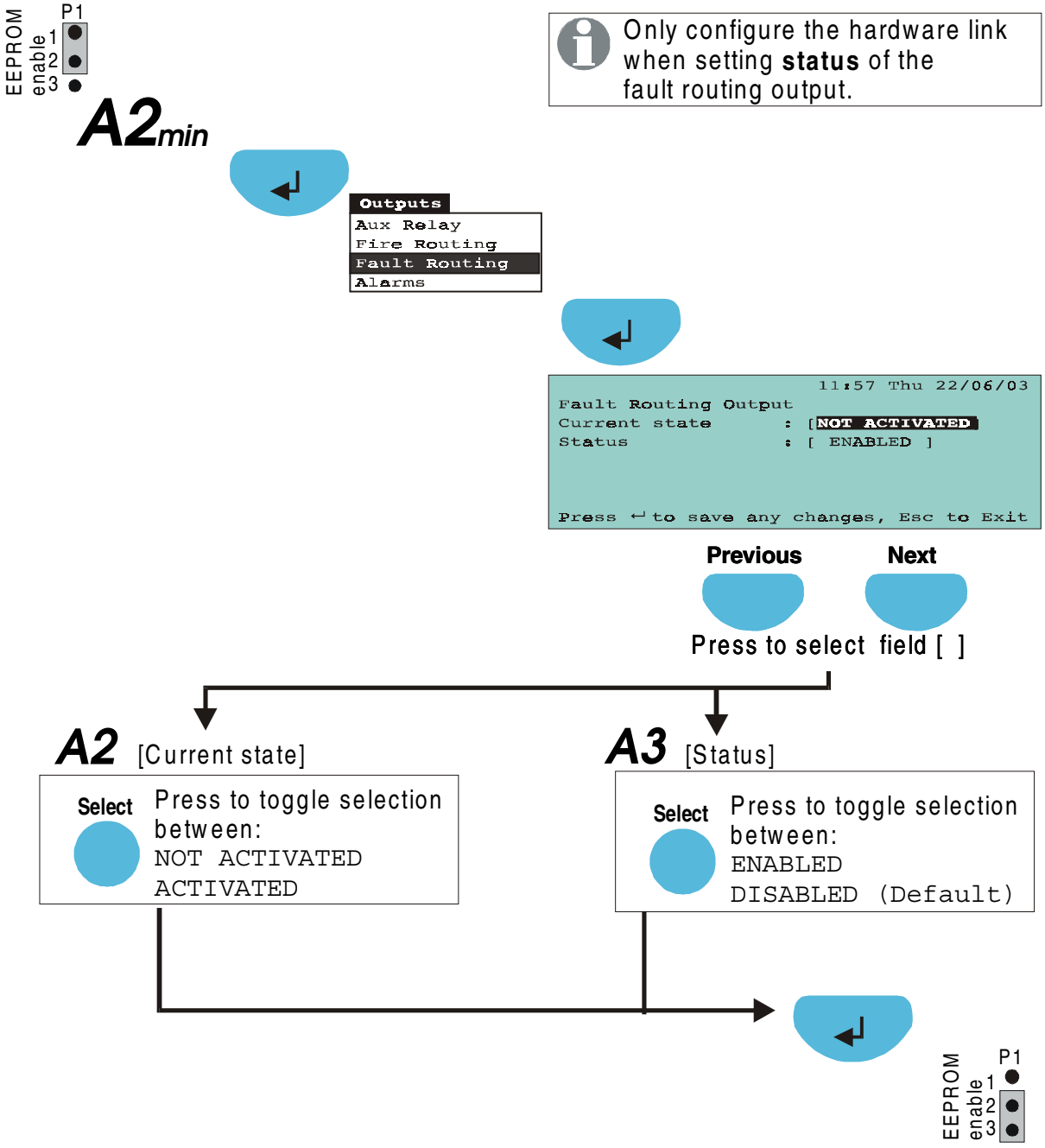
SILENCE ALARMS



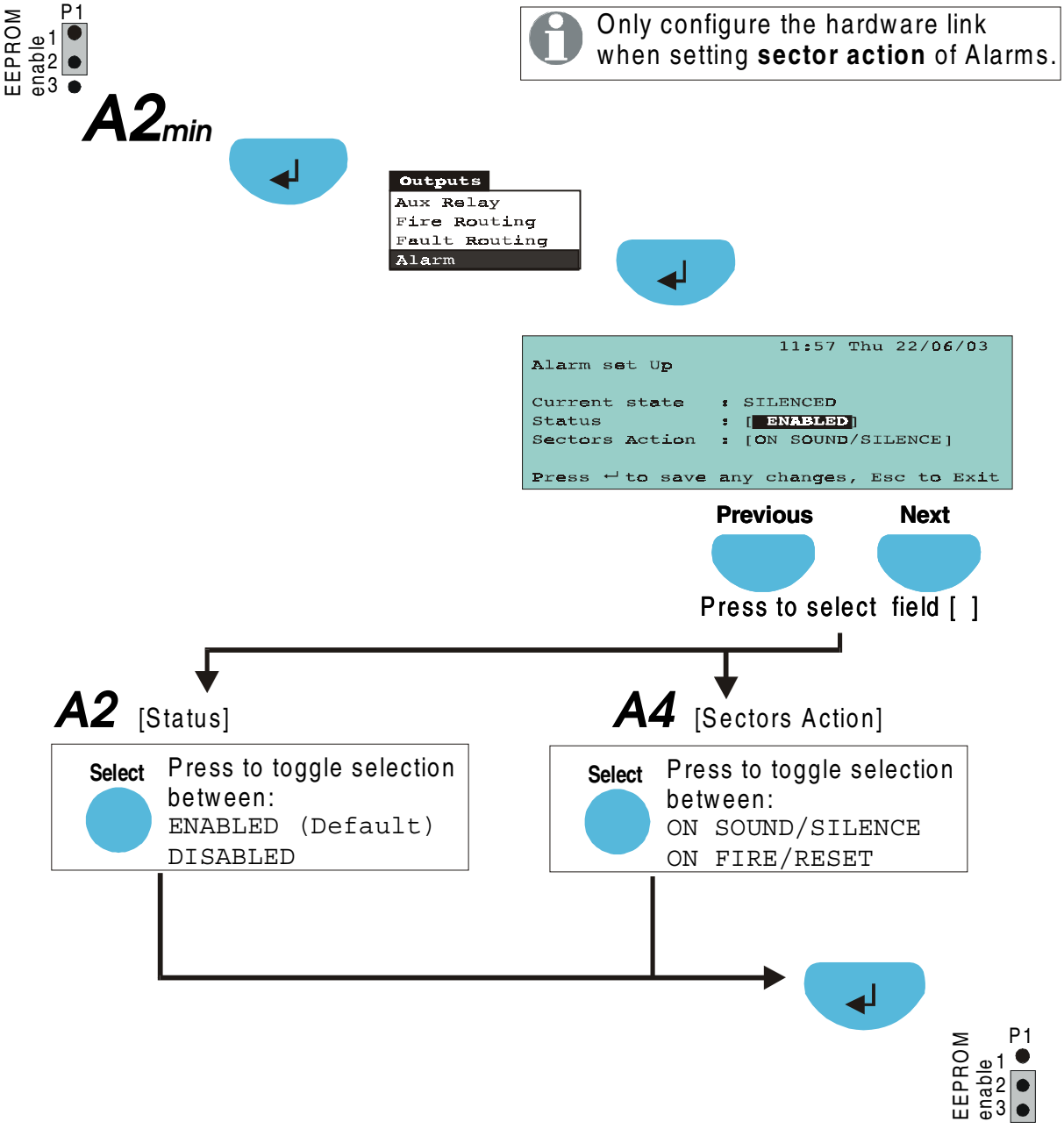
To set fire routing output operation (eg change activation type, delayed operation of relay and monitoring)



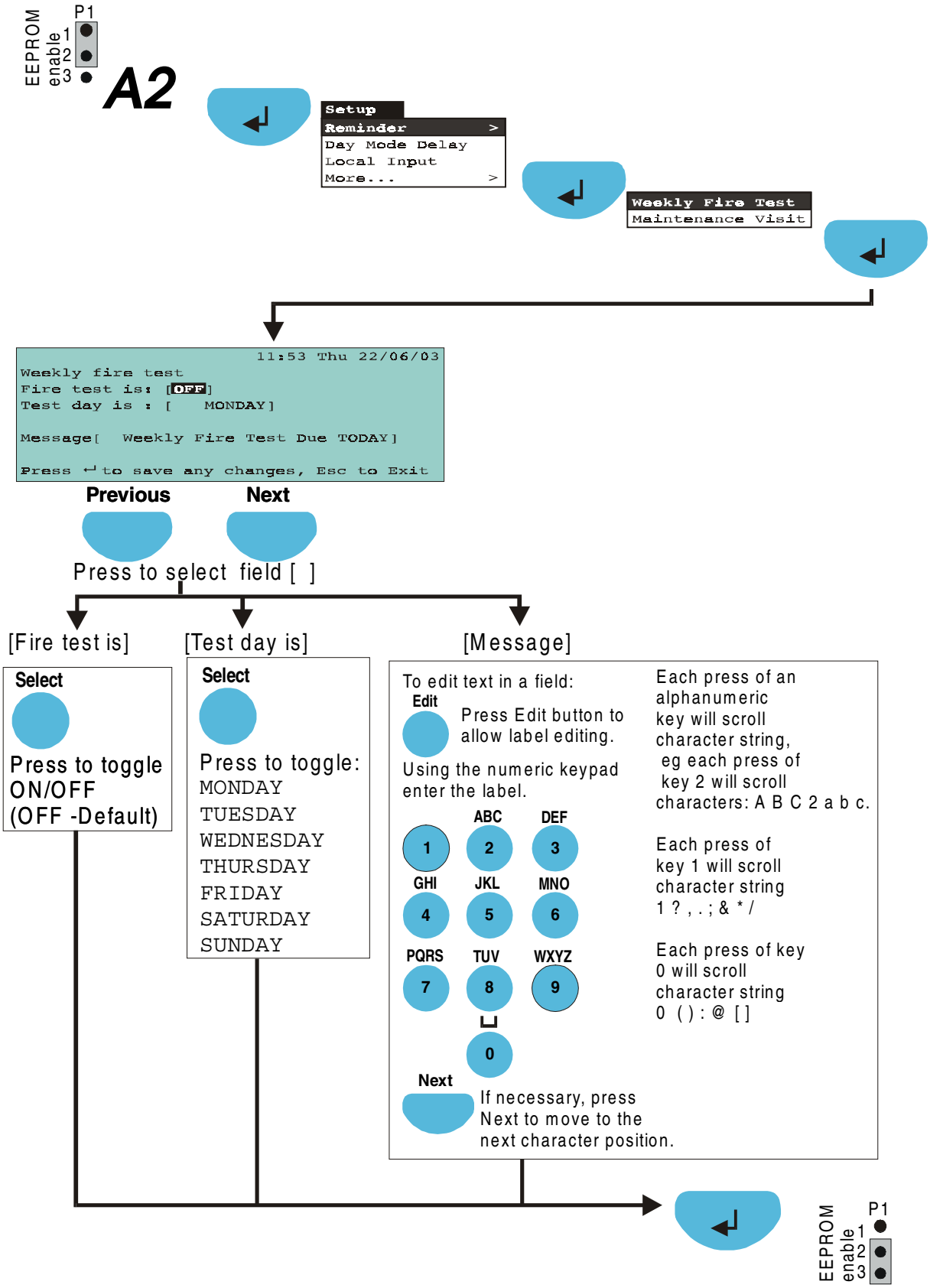
To set fault routing operation (eg activation type)



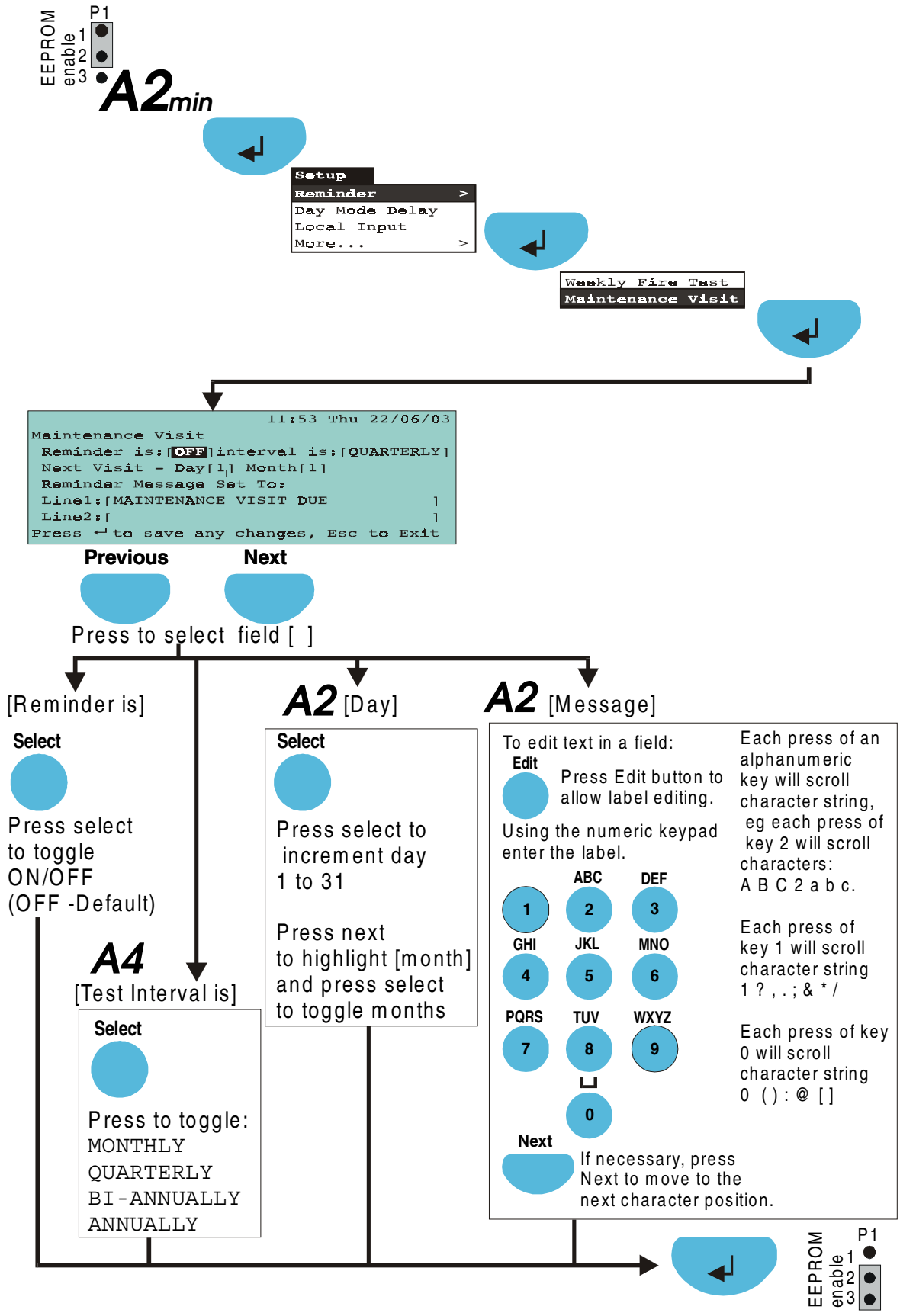
To view / enable or disable alarms sounders



To set weekly alarm test reminder message (eg day and message)

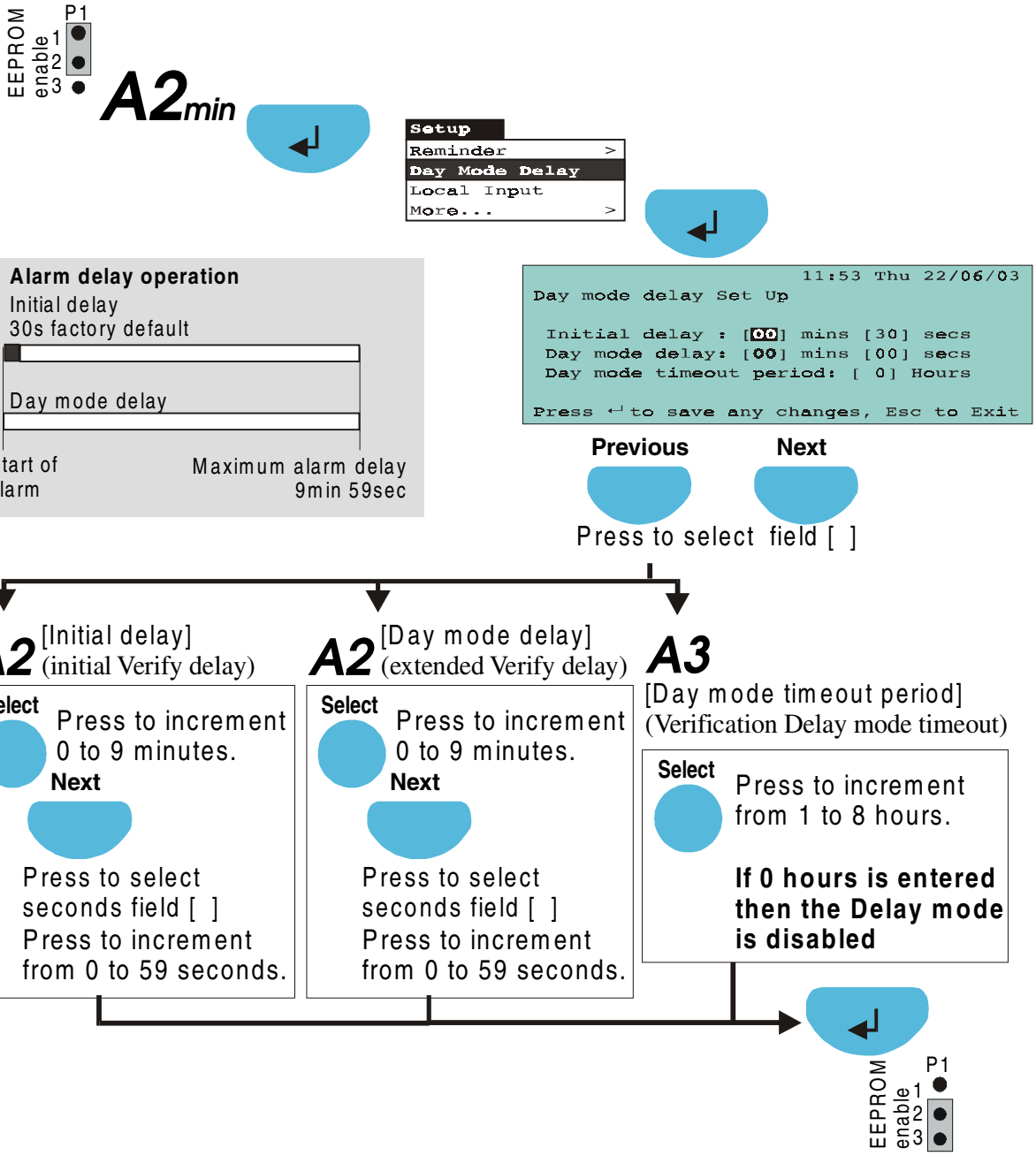


To set / view maintenance reminder message

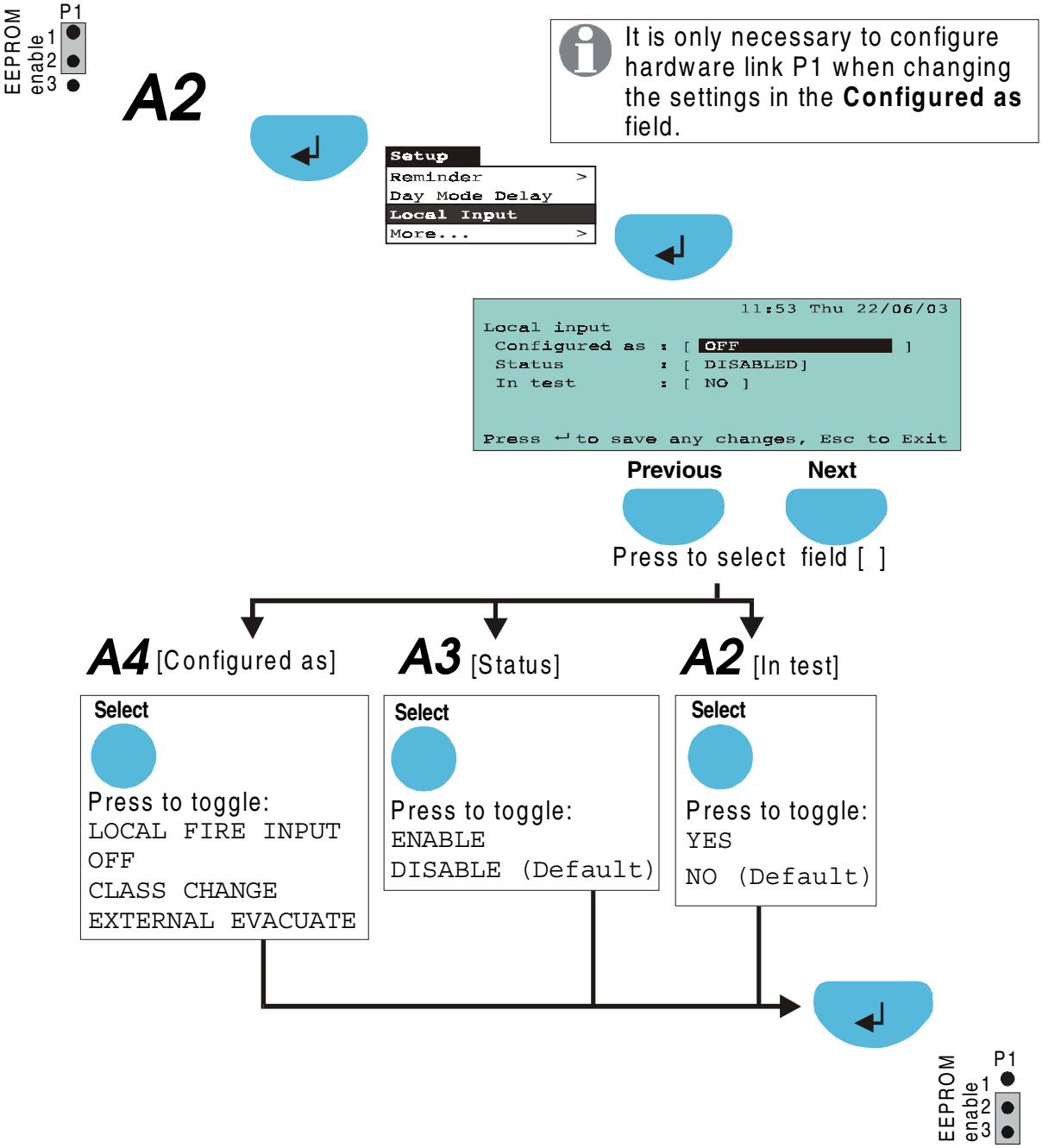


To set Delay and Verify functions

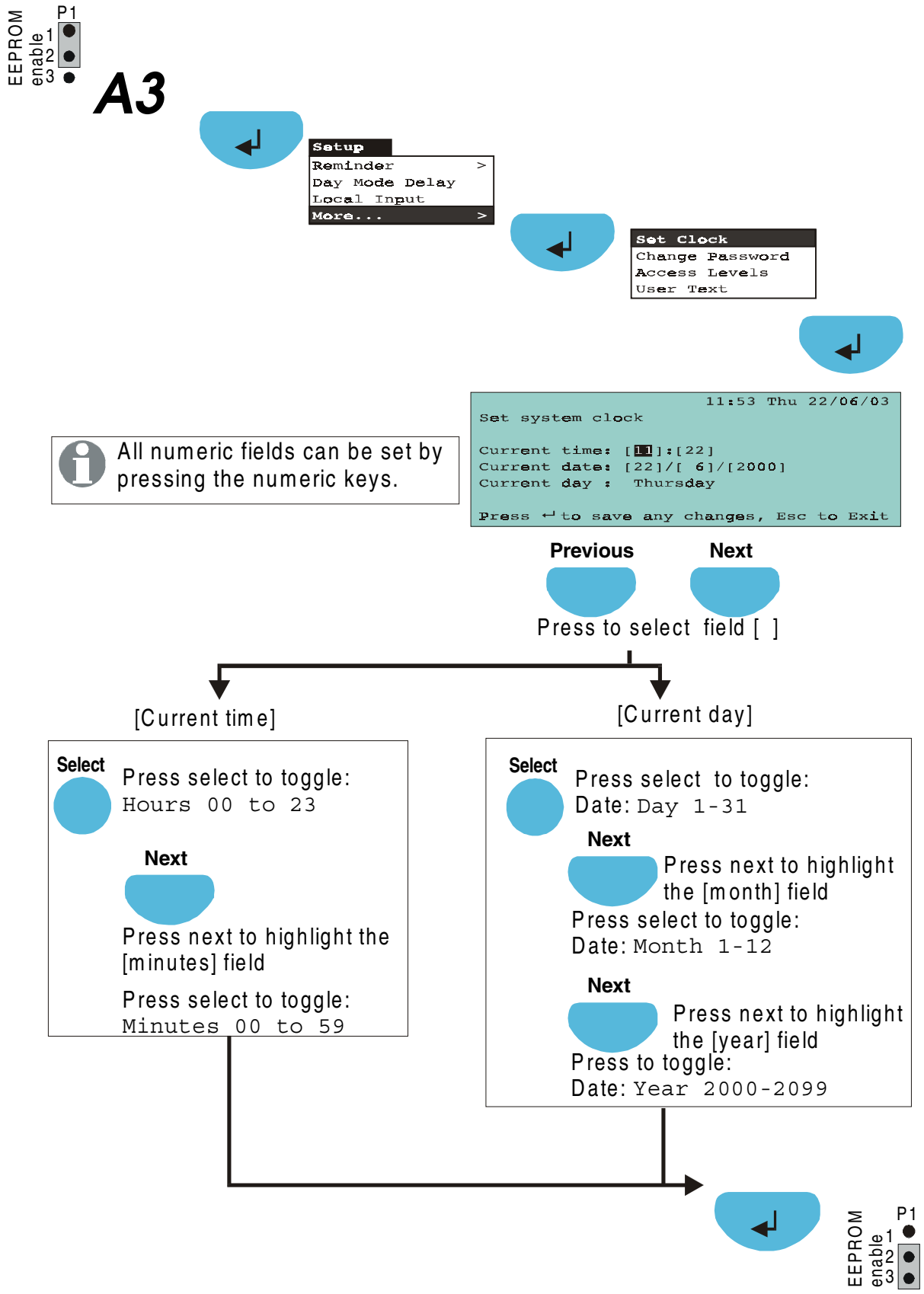
The **alarm sounders** in the system can be delayed on a fire condition. The **Initial delay** can be configured up to 9 minutes 59 seconds (factory set to 30 seconds). This delay is imposed on the alarm sounders at the beginning of a fire condition, providing the Delay facility is active with the delay LED lit.
The **Day mode delay** is an extended alarm delay to verify a fire alarm. This delay value can be up to 9 minutes 59 seconds. Note this value is the total delay duration from the start of a fire condition. It is made active on pressing the Verify button when initial Delay is active and delay LED is lit. The **Day mode timeout period** is the duration over which Delay and Verify functions can be operated.



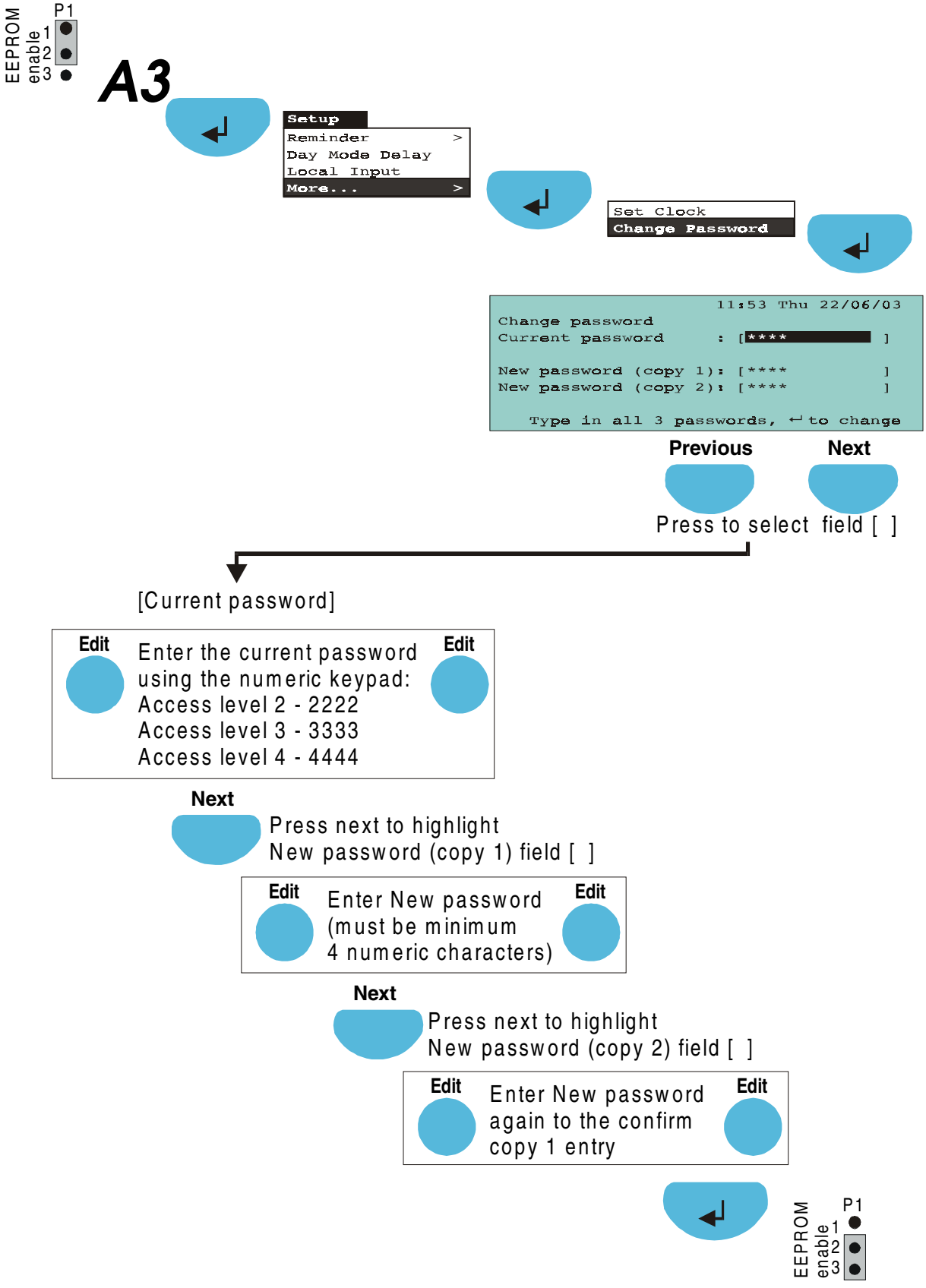
To set the Local input



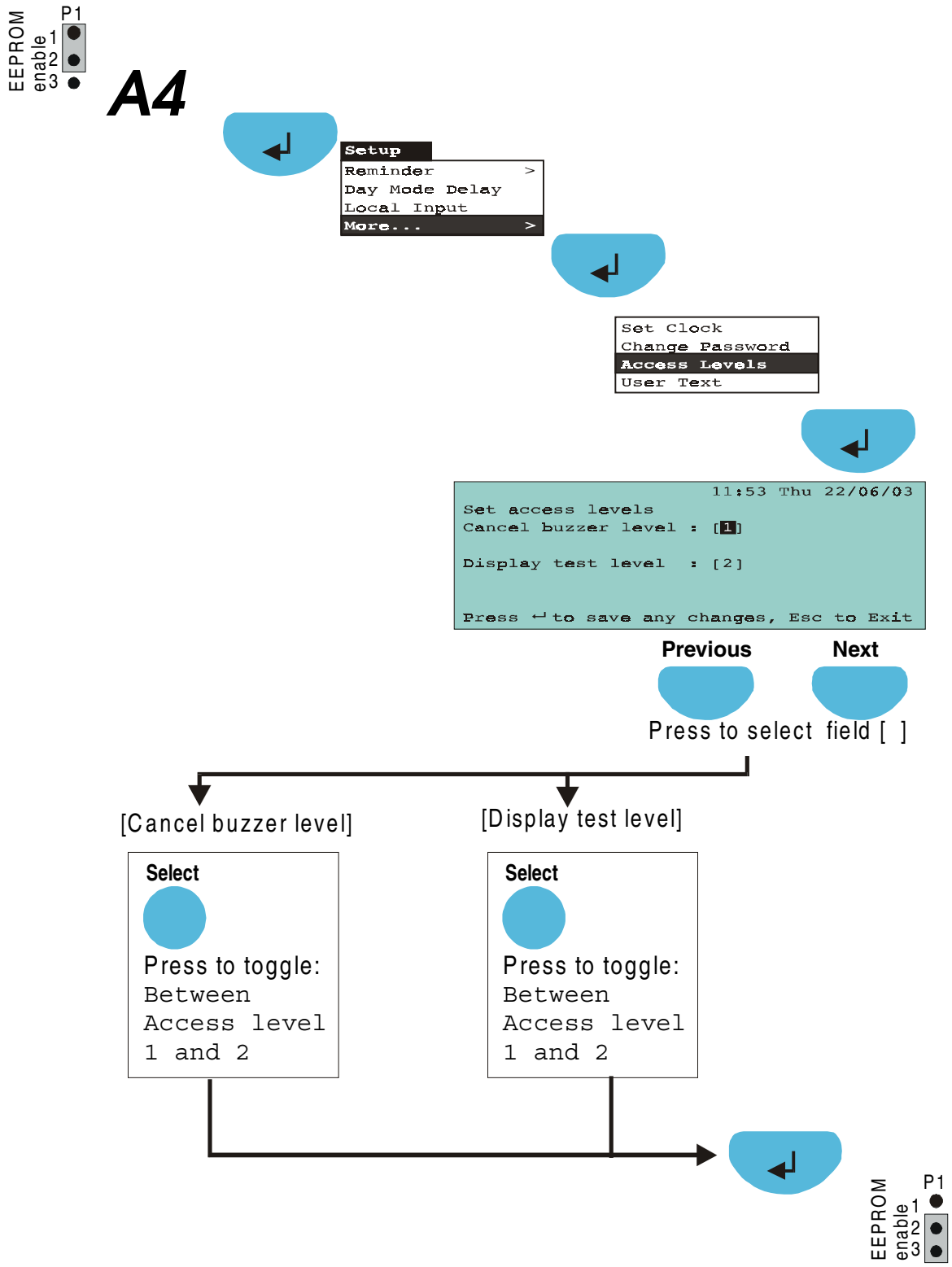
To set time and date



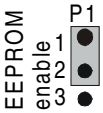
To change an existing password



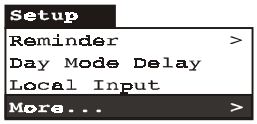
To set up the access level for Cancel buzzer and Display test controls

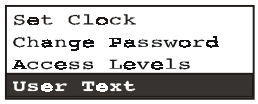


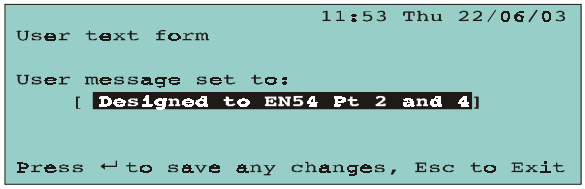
To edit User text



A4







To edit text in a field:

Edit

Press Edit button to allow label editing.

Using the numeric keypad enter the label.

	ABC	DEF
1	2	3
GHI	JKL	MNO
4	5	6
PQRS	TUV	WXYZ
7	8	9
	␣	
	0	

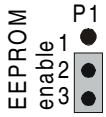
Next

If necessary, press Next to move to the next character position.

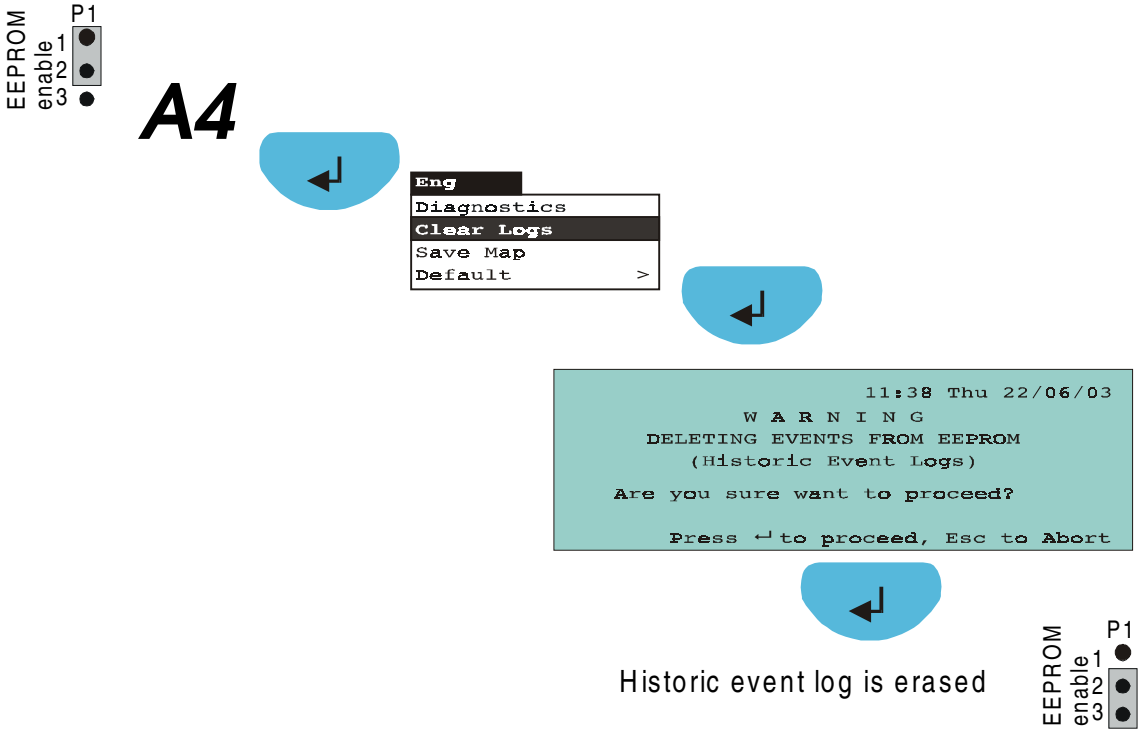
Each press of an alphanumeric key will scroll character string, eg each press of key 2 will scroll characters: A B C 2 a b c.

Each press of key 1 will scroll character string 1 ? , . ; & * /

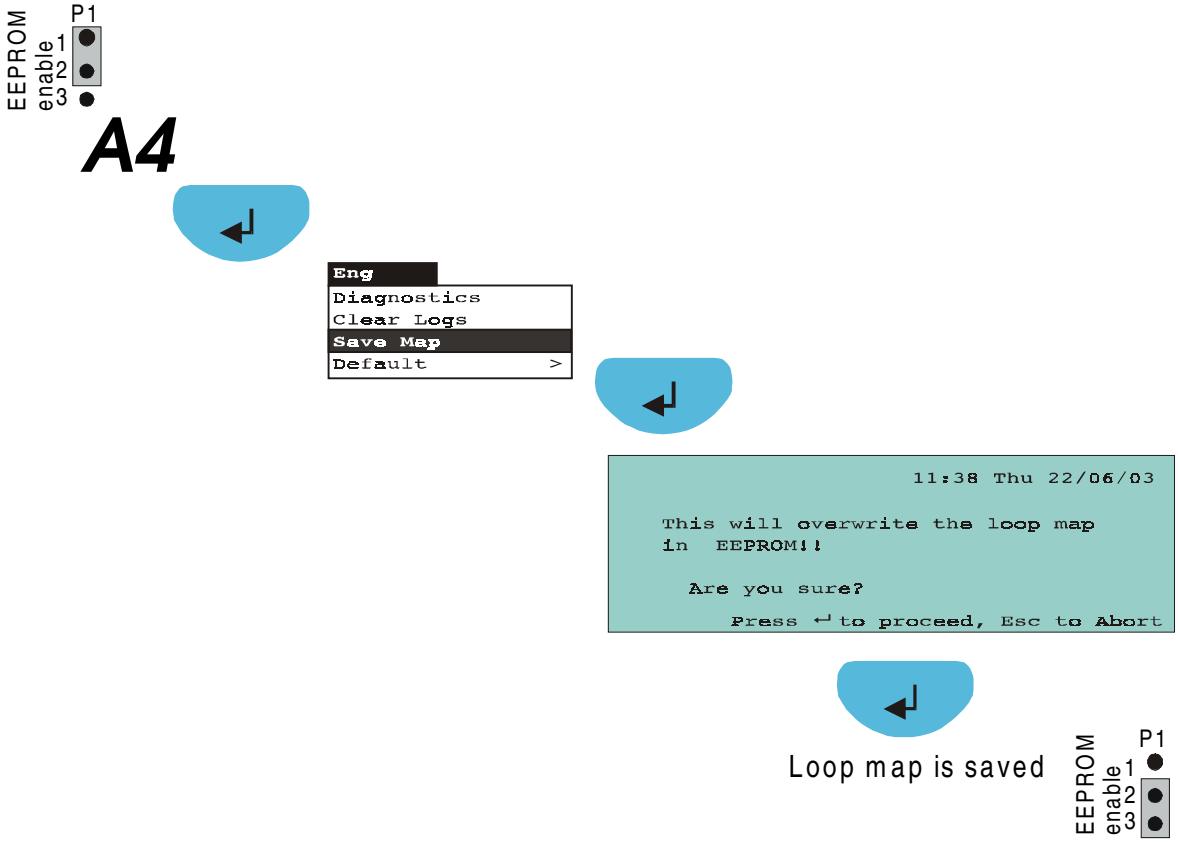
Each press of key 0 will scroll character string 0 ( ) : @ [ ]



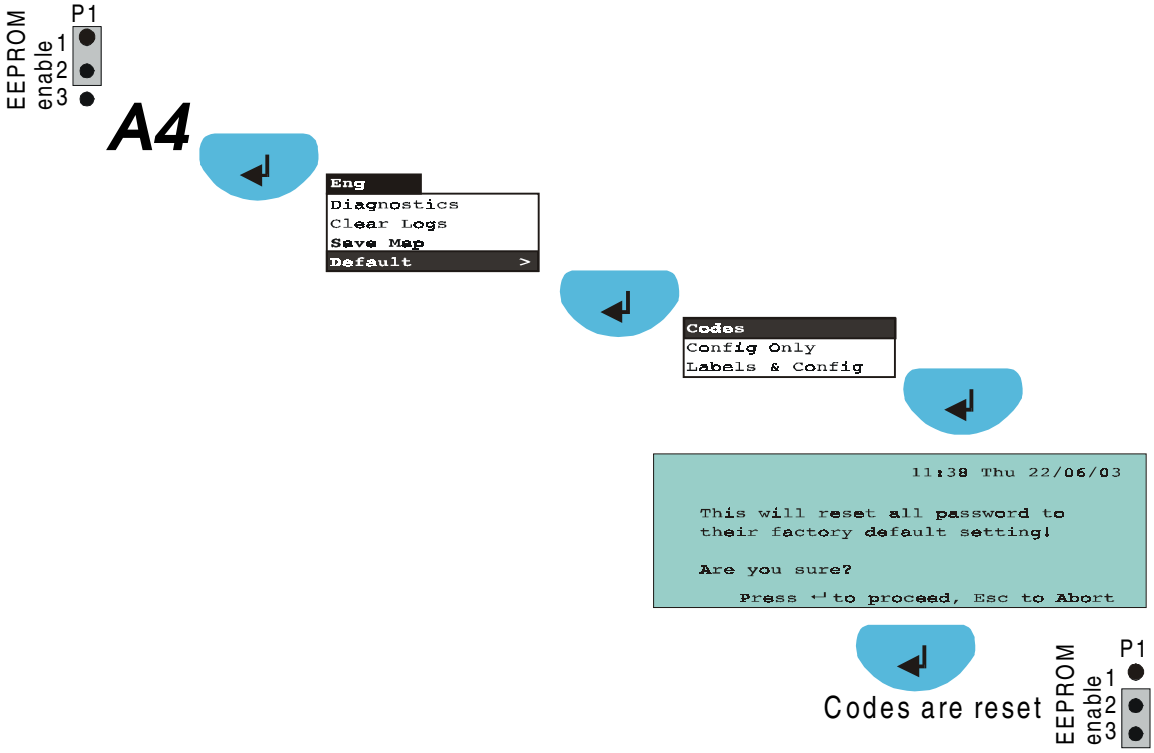
To clear logs



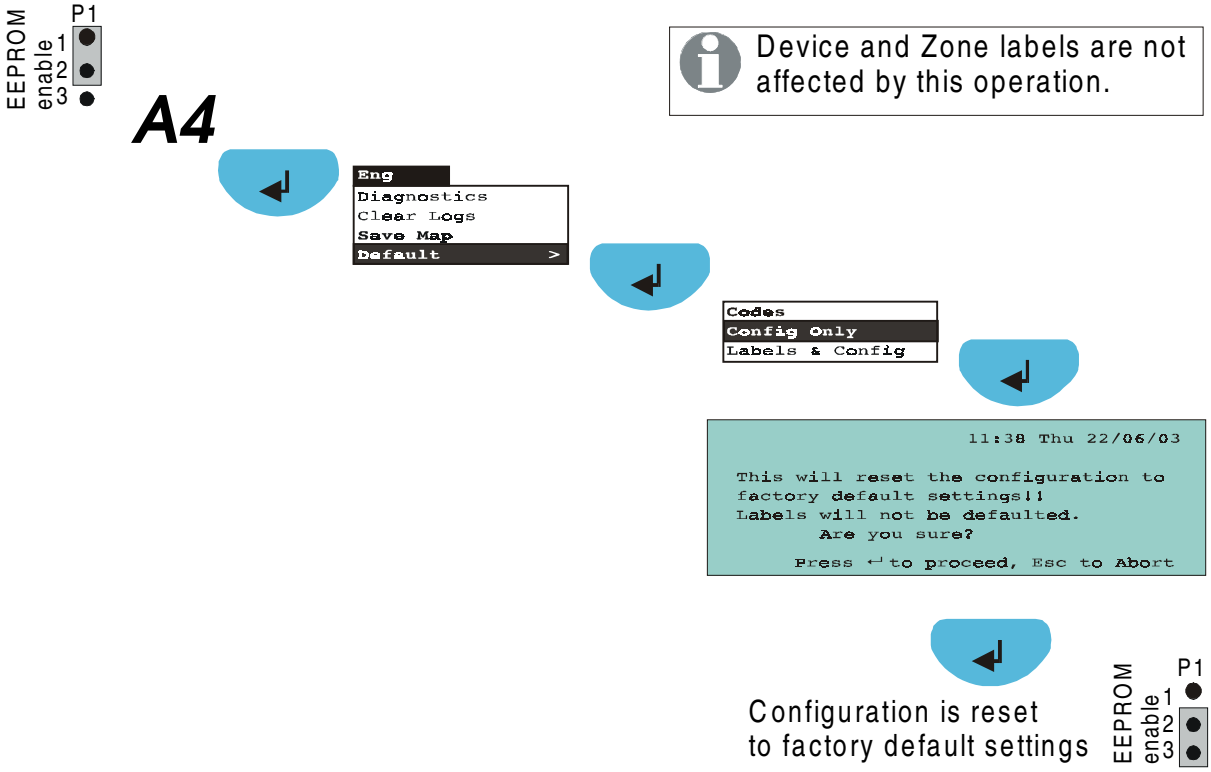
To save the loop map



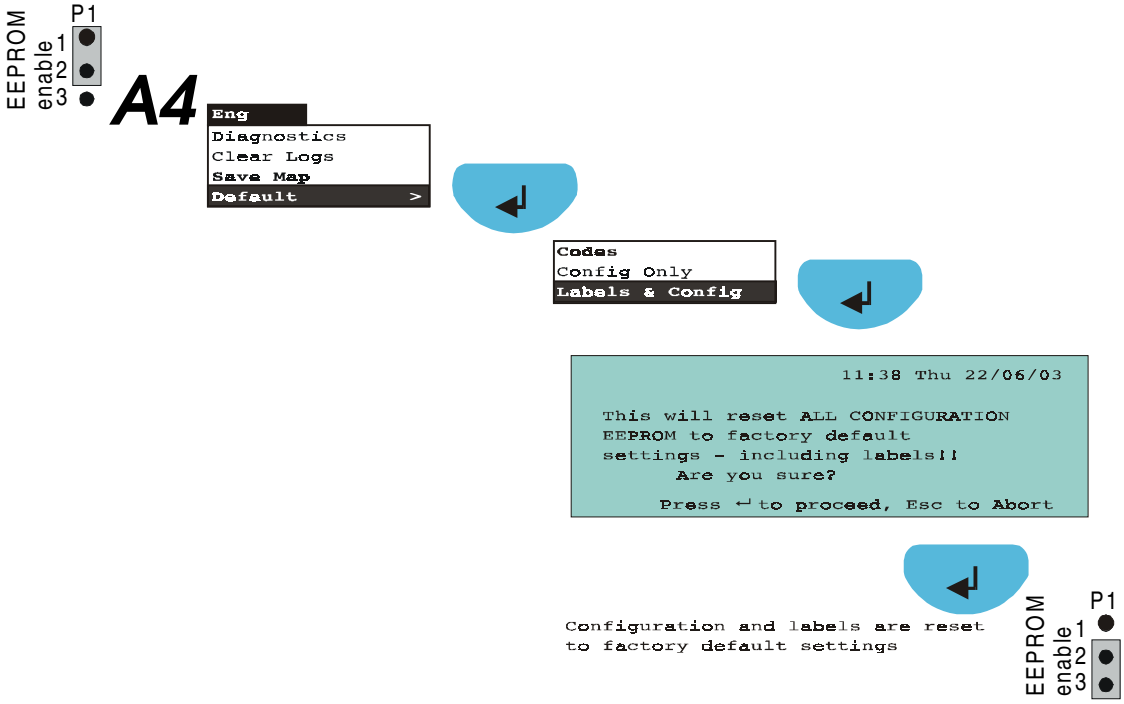
To reset all access codes to factory settings



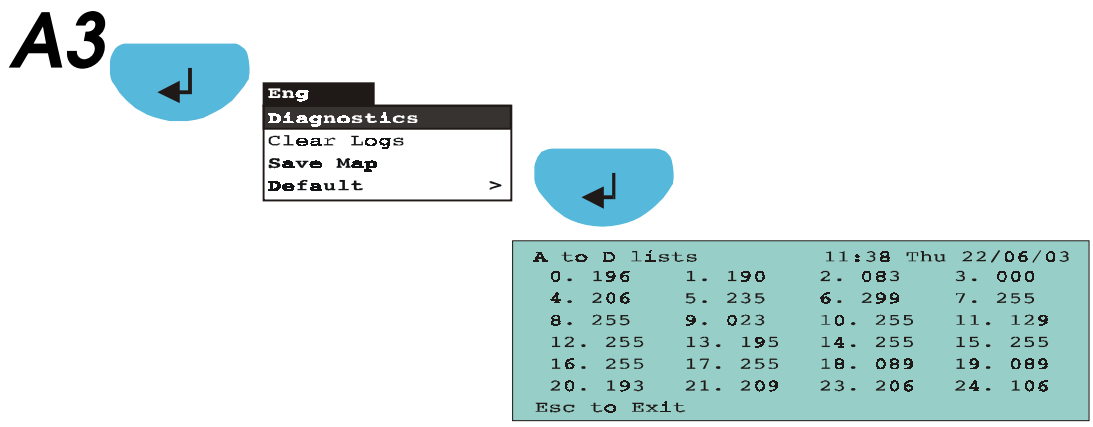
To reset the panel configuration to factory settings



To reset all configurations and labels to factory settings



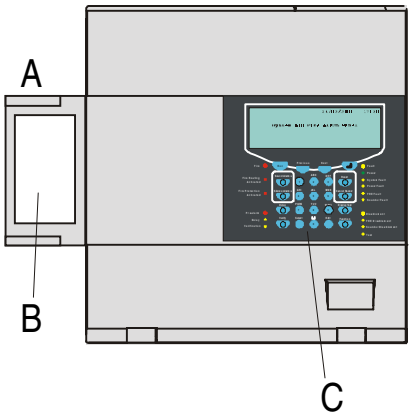
To view diagnostic data



A to D reference	Description of A to D reading	Lower limit	Higher limit	Condition
0	Mains	140	-	Mains fault - Below the lower limit.
1	Earth	74	204	Earth fault – Outside the two limits
2	5V	223	255	5V supply fault – Outside the two limits
3	12V	1	255	12V supply fault – Outside the two limits
4	24V	140	203	24V supply fault – Outside the two limits
5	Sounder 1	58	150	Short circuit fault if belwo the lower limit
6	Sounder 2	58	150	Open circuit fault if above the higher limit
7	Battery charger			
8	Initial battery 1 voltage			
9	Initial battery 1 current			
10	Final battery 1 voltage			
11	EEPROM Charger (PWM)			

A fault is indicated if the A to D value is outside the limits.

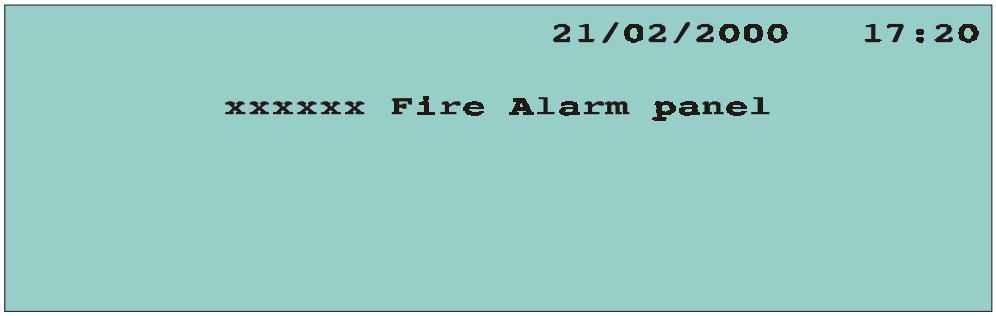
Appendix – Description of Controls and indicators

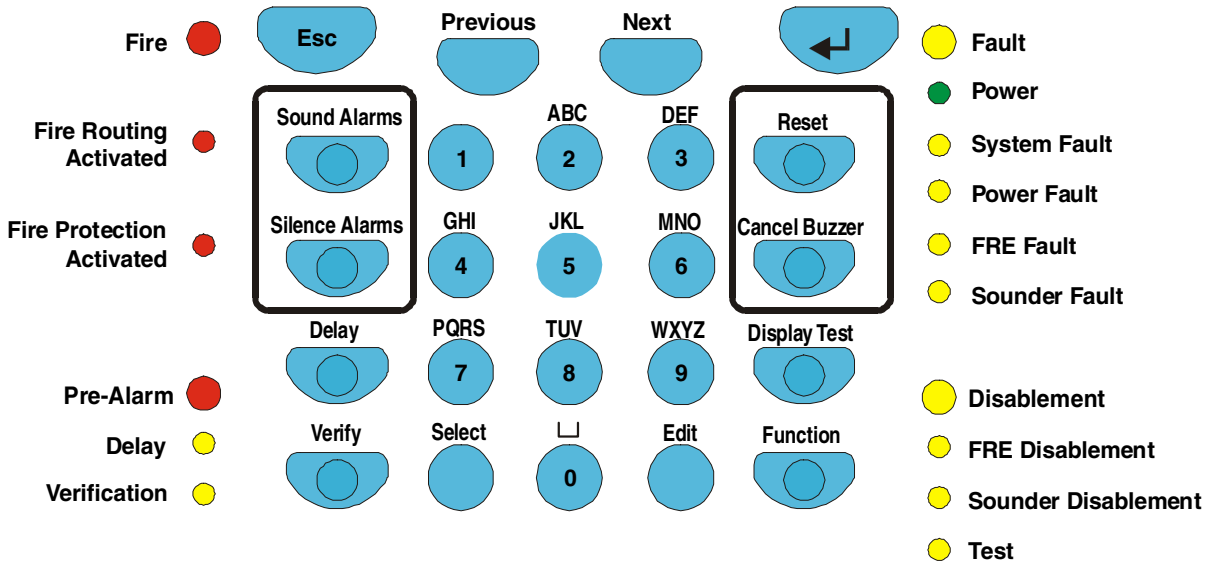


A – Flap

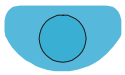
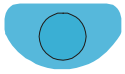
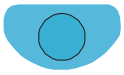
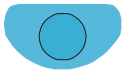
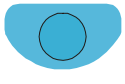
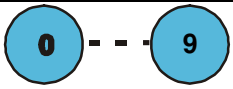
B – Instructions

C – Controls and indicators





Controls

Control	Access level	Function
Verify 	2	The button further delays the alarm from sounding for a pre-configured time (up to 10 minutes) only if Delay mode is active.
Delay 	2	The button activates the delay mode for a pre-configured time of up to 8 hours.
Sound Alarms 	2	The button starts the alarm sounders in the system.
Silence Alarms	2	The button stops the alarm sounders from sounding in the system.
Reset 	2	The button resets the panel.
Cancel Buzzer	1(default)/ 2	The button silences the audible warning buzzer at the panel.
Display Test	1 / 2(default)	The button tests the LED indicators, buzzer and display at the panel.
Esc	1	The button functions as a quit or escape key.
Previous Next	1	These buttons are used to scroll through active event list, form fields and menu options.
	1	This button is used to enter or accept a menu option.
Select	2	The button toggles the selections of a field in a form.
Function 	2	The button is used in the edit mode to copy and paste text in a label field.
Edit	2	The button allows editing of text entry in a field of a form.
	1	These buttons are used for entering numeric data.

Light indications

Indication	Light colour	Status of light and meaning
Fire	(Red)	**STEADY** – There is one or more fire(s) in the system. **OFF** – There are no fire(s) in the system.
Fault	(Yellow)	**STEADY** – There is at least one fault in the system, view the fault log for details. **OFF** – There are no faults.
Pre Alarm	(Red)	**STEADY** – There is at least one coincidence zone / device in the pre alarm state. **OFF** – There are no zones/device in coincidence fire.
Power	(Green)	**STEADY** – The mains & battery are healthy **OFF** – The panel has no mains supply or battery supply.
System fault	(Yellow)	**STEADY** – There is a system fault (MCU failure and non-volatile memory corruption). **OFF** – There is no system fault.
Power fault	(Yellow)	**STEADY** – There is either a mains or battery supply fault. **OFF** – There is no power fault.
FRE Disablement	(Yellow)	**STEADY** – The fire routing equipment (FRE) is disabled. **OFF** – The FRE is not disabled.
FRE fault	(Yellow)	**STEADY** – There is a fault with fire routing equipment. **OFF** –There is no fault with fire routing equipment.
Fire Protection Activated	(Red)	**STEADY** – The fire protection output has been activated and there is an automatic fire call out. **OFF** – The fire protection output is not active.
Fire Routing Activated	(Red)	**STEADY** – The fire routing output is active. **OFF** –The fire routing is not active.
Sounder fault	(Yellow)	**STEADY** – There is a sounder circuit open or short circuit fault. **OFF** – There is no sounder circuit fault.

Indication	Light colour	Status of light and meaning
Sounder Disablement	(Yellow)	**STEADY** – The system alarm sounders are disabled. **OFF** – The system alarm sounders are not disabled.
Disablement	(Yellow)	**STEADY** – There is at least one disablement or the panel is in engineering mode, view the disablement log for details. The engineering mode is normally accessed by the servicing organisation. OFF – There are no disablement.
Delay	(Yellow)	**STEADY** – The delay mode is active. **OFF** – The delay mode is not active.
Verification	(Yellow)	**STEADY** – The verification delay is active and alarms are being delayed from sounding. **OFF** – The verification delay is not active.
Test	(Yellow)	**STEADY** – The panel is in test state. **OFF** – The panel is not in test state.

Message description list for System 800

Any service and maintenance work on the panel or system must be carried out by a trained maintenance engineer from the fire alarm servicing organisation.

Message displayed	Description and checks
12V supply failed	The panel 12V supply has failed.
12V supply OK	The panel 12V supply is OK.
24V supply failed	The panel 24V supply has failed.
24V supply OK	The panel 24V supply is OK
5V supply failed	The panel 5V supply has failed.
5V supply OK	The panel 5V supply is OK
Access codes reset	The access codes have been manually reset to the factory default settings.
Access denied!	The command or menu option selected cannot be executed at the current access level. Enter a higher access level.
Access level changed	The access level has changed.
Alarms silenced	The fire alarms in the system have been manually silenced.
Alarms sounded	The fire alarms in the system have been manually activated and are sounding.
Allocation Tx Error	The panel is not getting a response when communicating with a device on the loop circuit.
All zones in test	All zones of the system have been manually put into a weekly fire test state.
All zones out of test	All zones of the system have been taken OUT of weekly fire test.
Batteries discharged	The panel 12V 7Ahr batteries are discharged. Replace batteries in the panel.
Batteries disconnected	The panel 12V 7Ahr batteries have been disconnected.
Battery fault cleared	The battery disconnection or discharge fault has cleared.
Cannot put all zones into test	The panel is in a fire condition and a manual attempt to put all zones into weekly fire test state is rejected. Ensure the panel is not in fire condition before putting all zones into test state.
Cannot test fire input	The panel is in fire condition, therefore manual attempt to test the fire input is rejected.
Charger fault	The battery charger in the panel has developed a fault. Check the battery circuit wiring and battery fuse.
Charger fault Cleared	The fault associated with the battery charger circuit on the electronic module has been cleared.
Class change Off	The class change input has been switched off.
Class change operated	The class change input has been operated and the sounders in the system are active.
Clock settings saved	Changes made to the clock settings have been saved.
Customer mode entered	The customer mode has been entered to allow access to menu options under level-3.
Data saved	The changes made to the system configuration has been saved.
Day mode data saved	Changes made to the day mode settings have been saved.

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Message displayed	Description and checks
Day mode entered	The day mode is active. The day mode is automatically exited after a pre-configured timeout period has elapsed
Detection devices config. OK	The detection device assignment has been configured correctly.
Detection devices not zoned	The fire detection devices on the loop are not assigned to zones. Assign each fire detection device to a zone of the fire panel.
Device disabled / enabled	The device has been manually disabled / enabled.
Device has no address	A new device has been wired on the loop whilst the loop was running.
Device isloating short circuit	The wiring between the displayed devices has a short circuit. If however the short was on the wiring between the panel and device then only one device address is displayed.
Device type compatible	The device found on the loop is a valid type.
Device type OK	The device type replaced is now OK.
Device wrong type	The device replaced is of a different type. Replace like for like device.
Duplicate address fault cleared	The duplicate addressing fault has cleared.
Duplicate address occurred	The panel has found two devices having the same address. Check the wiring and re-allocate the loop by re-powering the loop and detection.
Engineering mode entered	The engineering mode has been entered to allow access to menu options under level-4.
Exit engineering mode	There panel has timed out of engineering mode (level 4).
Exit to level one	There has been a manual exit to access level 1 from either level 2,3 or 4.
External evacuate activated	The external evacuate (local input) is still active.
External evacuate fault cleared	The external evacuation (local input) has been cleared.
External evacuate operated	There has been an external evacuate signal at the local input and the system alarms are sounding.
External evacuate reset	The external evacuate signal has been reset for normal operation.
Fault routing disabled	The fault routing equipment is disabled.
Fault routing enabled	The output signal to fault routing equipment is enabled.
Fault routing output fault cleared	The fault associated with the fault routing output has cleared.
Fault routing output O/C or SC	There is a open or short circuit fault between the fire routing equipment and the control panel. Check the wiring between the fault routing equipment and fire panel.
Fire input into test	The local fire input has been manually put into test state.
Fire input operated	The local input has signalled a fire condition.
Fire input reset	The local fire input has been reset for normal operation.

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Message displayed	Description and checks
Fire not reset	Initial fire is still present or there is another fire.
Fire protection equipment fault cleared	Open or short circuit fault associated with the fire protection circuit has been cleared.
Fire protection equipment OC	There is an open circuit fault associated with the fire protection equipment circuit. Check the fire protection equipment wiring to the panel.
Fire protection equipment SC fault	There is a short circuit fault associated with the fire protection equipment circuit. Check the fire protection equipment wiring to the panel.
Fire routing activated	The fire routing equipment connected to the fire panel has been manually activated.
Fire routing de-activated	The fire routing equipment connected to the fire panel has been manually de-activated.
Fire routing disabled / enabled	The output signal to fire routing equipment connected to the panel is disabled / enabled.
Fire routing output fault cleared	The fault associated with the fire routing output has cleared.
Fire routing output O/C or S/C fault	There is an open / short circuit fault between the fire routing equipment and the control panel. Check the wiring between the fire routing equipment and fire panel.
Fixed ext. equipment fault cleared	A fault associated with the fixed extinguishing equipment (fire protection equipment) has cleared.
Hardware fault during start up	tba
Historic event log erased	The historic event log was erased.
Incompatible device	The device installed on the loop does not have an isolater fitted.
Invalid config data	On exiting access level 4 the panel has found discrepency in the configuration data. Check the panel configuration.
Invalid password	The password entered is not valid. Enter correct password.
Labels cleared in EEPROM	
Left day mode	The day mode timeout has expired.
Left Security/customer /engineering mode	There has been an automatic return to access level 1 after a duration of controls not being used. If required, manually re-enter the apropriate access level.
Local input disabled / enabled	The local input has been disabled / enabled.
Local input fault cleared	The short or open circuit fault on the local input lines have cleared.
Local input O/C or S/C fault	There is an open/short circuit fault on the local input, which can be class change, fire input or external evacuate circuit wiring. Check wiring between the external equipment and fire panel.
Local input test fire	The local fire input has been manually put into fire test state. On completion of tests manually remove the test state from the local fire input.

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Message displayed	Description and checks
Loop allocated	The control panel has completed address allocation of each device found on the loop.
Loop device fault cleared	The fault associated with the loop device has cleared.
Loop device faulty	There is a hardware fault on the device. Replace the loop device.
Loop device lost	The device is not communicating. Check and replace the device if necessary.
Loop device removed	A device has been removed from the loop, for example detector removed from its base. Re-connect the device on the loop.
Loop device replaced	A previously removed device has been replaced.
Loop map changed	The loop map is different to the one previously allocated. Check the two map of loop allocations, compare them to find the difference.
Loop map saved	The loop map has been saved.
Loop not allocated	The loop is not allocated. Allocate the loop.
Loop Running	The fire detection and alarm function of the loop circuit is fully operational.
Loop Stopped	The loop has been powered down and fire/fault detection is suspended.
Loop wiring fault cleared	The fault associated with loop wiring has cleared.
Loop wiring partial short circuit	There is a partial short circuit wiring fault on the loop. Identify the location of short circuit fault and rectify the faulty wiring on the loop.
Loop wiring short circuit	There is a short circuit wiring fault on the loop. Identify the location of short circuit fault and rectify the faulty wiring on the loop.
Mains supply failed	The mains supply to the panel has failed. Check the mains supply to the panel. Also check the fused spur to the panel and the mains fuse in the panel.
Mains supply OK	The mains supply to the control panel is OK.
Maintenance visit due	This message prompts the responsible person to call the servicing organisation to carryout periodical maintenance work on the system.
Master alarm 1/2 fault cleared	The fault associated with the master alarm circuit 1 or 2 has cleared.
Master alarm 1/2 open/short circuit	There is an open / short circuit fault on the of master alarm sounder circuit 1 or 2. Check the wiring and ensure the end of line resistors are fitted on the last sounder.
New password saved	The new password for access levels 2, 3 or 4 had been changed and saved.
New Passwords do not match, try again	There is a mismatch between copy 1 and copy 2 of the new password.
No devices found on loop	There were no devices found on the loop circuit.
No MCPs Tested	Following a manual request for weekly fire test message at the panel no manual call points were tested.
Panel already reset	More than one fire reset have been performed on the panel. There is no need to reset sucessfully reset panel.

Any service and maintenance work on the panel or system must be carried out by a trained maintenance engineer from the fire alarm servicing organisation.

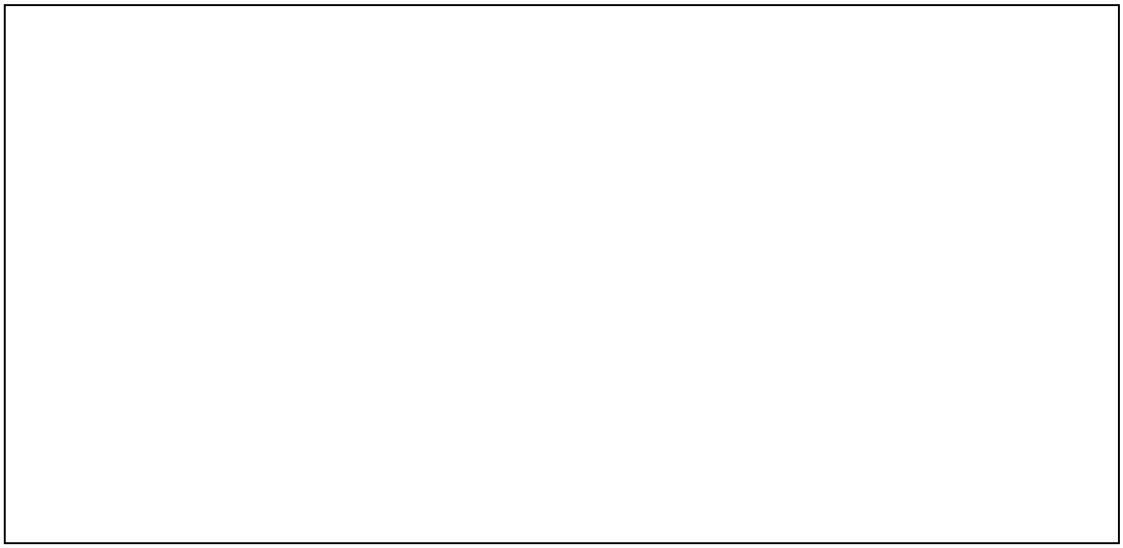
Message displayed	Description and checks
Panel earth fault	There is an earth fault at the panel. Check the earth connections to the panel.
Panel in customer mode	The panel is now in customer mode that is at access level 3.
Panel in engineering mode	The panel is now in engineering mode, that is at access level 4.
Panel in fire - Access denied	Access to the functionality requested is not possible while the panel is in fire condition.
Password must be at least 4 characters	The new password must be at least 4 character long.
Regulated dc supply high	The regulated DC power supply on the electronic module is too high.
Regulated dc supply OK	The regulated DC power supply is OK.
Reset successful	A manual fire reset from the panel was successful.
Security mode entered	The security mode has been entered to allow access to menu options under level - 2.
Settings saved	The changes made to settings in a form has been changed.
Settings updated	The settings made has been saved.
Sounder disabled	Alarm sounders in the system have been disabled.
Sounder enabled	The alarm sounders in the fire alarm system have been enabled.
Split loop allocation cleared	The split loop fault has cleared.
Split loop alloc'd	There is a split in the loop circuit wiring between end-1 and end-2. Rectify the wiring fault.
System clock adjusted	The time and date settings at the panel have been adjusted.
System clock not set	The time and date has not been set at the panel. Set the time and date at the panel.
System fault - processor failure	The processor controlling the control panel has failed. Call servicing organisation to rectify the fault.
System fault cleared	The fault associated with the panel microprocessor has cleared.
Too many devices on loop	The number of devices found on the loop have exceeded the maximum limit. Disconnect and remove devices from loop to within the accepted maximum range.
Unknown device type	This device type is not recognised.
Unsaved data!! Enter to Save or any key	The modified data on the form has not been saved. Press enter to save the shanges or press any key to exit the form without saving the data.
Valid configuration	The configuration remains valid after leaving access level 4.
Weekly fire test due today	This is a reminder message to carryout a weekly fire test on the system.
Zone disabled	A zone has been manually disabled.
Zone enabled	A zone has been manually enabled.
Zone test fire	The zone has been manually put into fire test state.

Product data

	System 800 fire alarm panel
Standards	EN54 Part 2 & Part 4
Number of Zone	24 zones per panel
Devices on loop	127 maximum
Battery supply	2 x 12V 7Ah
Standby period	24 hour standby + 0.5 hour alarm
Repeat panel output	To output to repeat indicator units (up to 2 maximum per system)
Common fault output	Voltage free change over contacts rated 2A @ 30V
Common fire output	Voltage free change over contacts rated 2A @ 30V
24V supply out	24V output
Sounder circuits and load	2 sounder circuits per panel 0.45A each protected by auto reset thermal fuse
Sounder End of line resistor	10K ohms resistor
Auxiliary output	Voltage free change over contacts rated 2A @ 30V
External power supply input and monitoring	24V with mains and battery fail output
Panel Enclosure	ABS
Colour	Light blue-grey - Pantone 538
Dimension	Height 375mm x Width 355mm x Depth 115mm
Approval	Applied for LPCB approval
Approximate Weight (without batteries)	3.1Kg
IP rating	IP 31
Operating temperature	0ºC to 50ºC
Storage temperature	-20ºC to 60ºC
Terminal size	All terminals can accept a cable with a maximum of 2.5mm² cross section area
Cable entry points	Top and back
Mains supply	230V AC 50Hz (+10% -15%)
Factory set access codes	Access level 2 – 2222 (timeout 3 minutes) Access level 3 – 3333 (timeout 3 minutes) Access level 4 – 4444 (timeout 4 hours)

Notes

Notes



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